

May/June 2014
Volume 39, Number 6

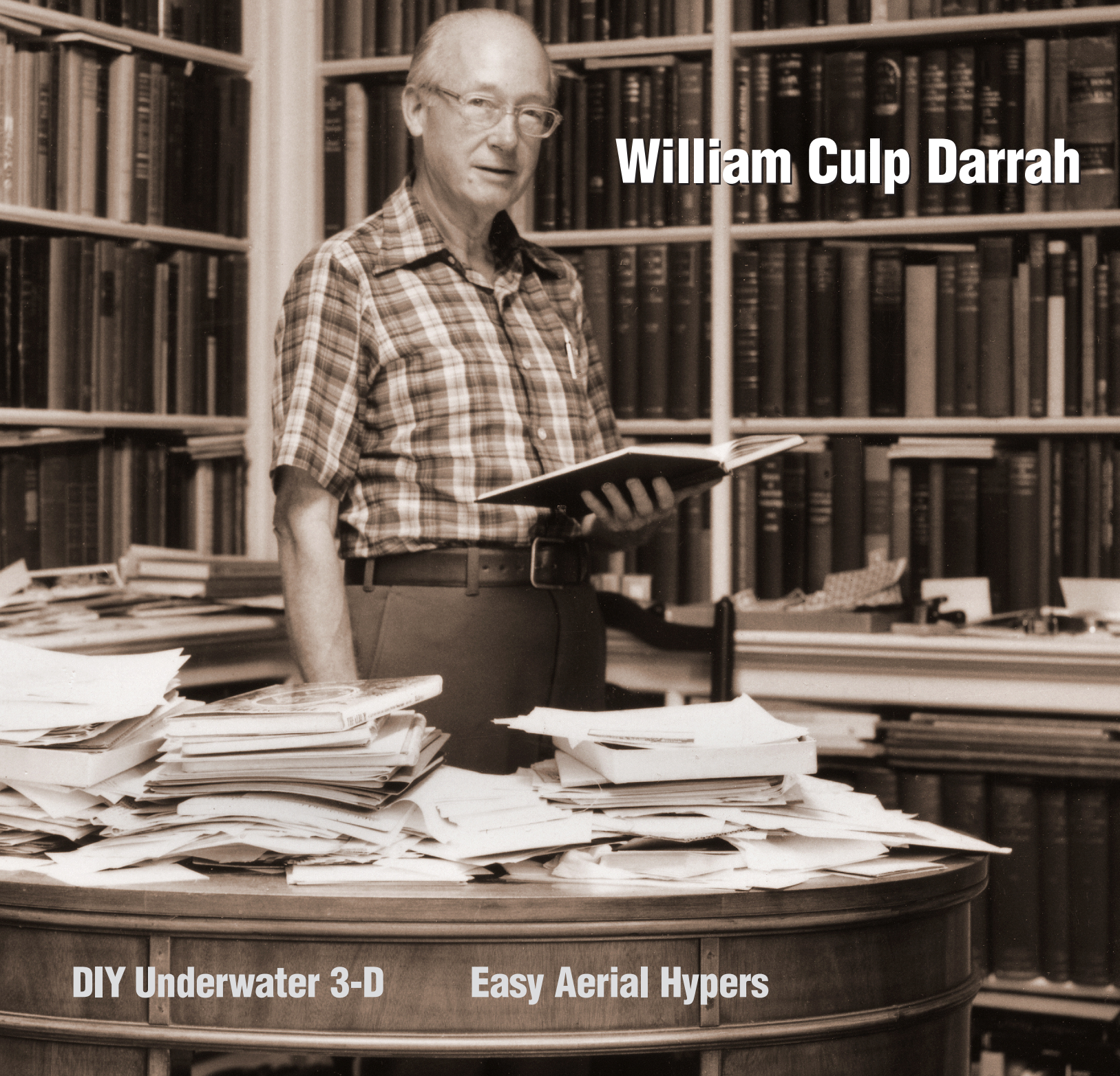


A Publication of
National
Stereoscopic
Association, Inc.

3-D Imaging Past & Present

STEREO WORLD

William Culp Darrah



DIY Underwater 3-D

Easy Aerial Hypers

'50s Flavored Finds

A taste of the late '40s through the early '60s found in amateur stereo slides

by Mark Willke

The 1959 World Series in 3-D

The images for this issue's column were provided by John Martin of California. According to notes written on the Kodachrome mounts, they were taken at the 1959 World Series at Chicago's Comiskey Park—home of the Chicago White Sox—where the White Sox played the Los Angeles Dodgers.

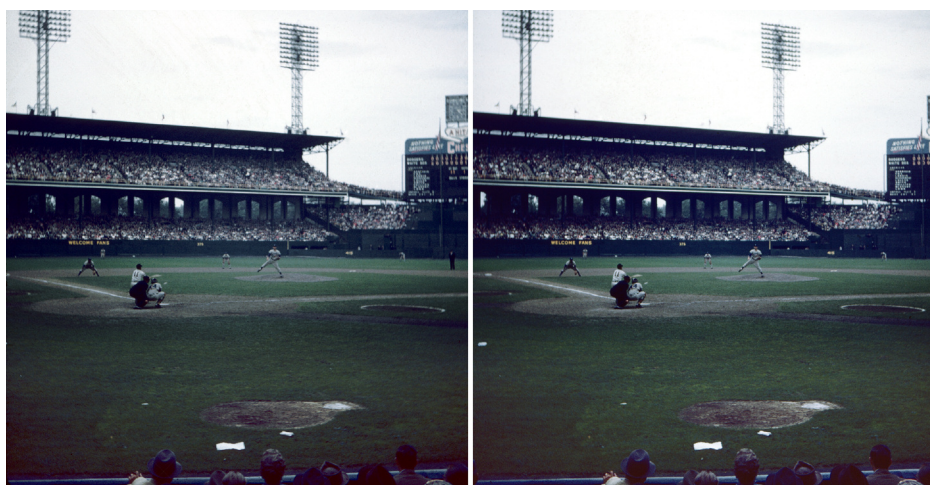
The first slide shows a nice exterior shot of the park, presumably as the man in the foreground is heading toward the entrance. The vintage cars in the background are a nice touch! The other two views are photos of the actual game, and while they do not exhibit a lot of depth beyond the spectator's heads, they are still interesting.

I was amused by the large ad for Chesterfield cigarettes on the scoreboard, complete with what appears to be a giant lit cigarette!

This column combines a love of stereo photography with a fondness for 1950s-era styling, design and decor by sharing amateur stereo slides shot in the "golden age" of the Stereo Realist—the late 1940s through the early 1960s. From clothing and hairstyles to home decor to modes of transportation, these frozen moments of time show what things were really like in the middle of the twentieth century.

If you've found a classic '50s-era image that you would like to share through this column, please send the actual slide or a high-resolution side-by-side scan as a jpeg, tiff or photoshop file to: Fifties Flavored Finds, 5610 SE 71st, Portland, OR 97206. You can also email the digital file to strwld@teleport.com. If the subject, date, location, photographer or other details about your image are known, please include that information as well.

As space allows, we will select a couple of images to reproduce in each issue. This is not a contest—just a place to share and enjoy. Slides will be returned within 6 to 14 weeks, and while we'll treat your slide as carefully as our own, Stereo World and the NSA assume no responsibility for its safety.



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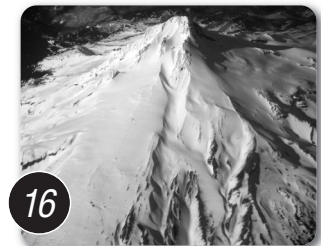
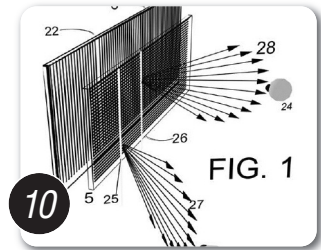
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Front Cover:

William Culp Darrah in his Gettysburg home with his 1964 book *Stereo Views* from Richard C. Ryder's feature "William Culp Darrah: Paleontologist, Professor, Stereographic Pioneer." No. 51 in the series "A Second Century of Stereoscopic Views" by Nicholas Graver.

Back Cover:

An immature Redlight Parrotfish from our article "DIY Underwater 3-D Camera Housing" by Jan Cocatre-Zilgien.



The National Stereoscopic Association

is a non-profit organization whose goals are to promote research, collection and use of vintage and contemporary stereoviews, stereo cameras and equipment, and related materials; to promote the practice of stereo photography; to encourage the use of stereoscopy in the fields of visual arts and technology; to foster the appreciation of the stereograph as a visual historical record.

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Annual membership dues (six issues): \$32 third class US, \$44 first class US, \$44 all international memberships. New members receive a plastic lorgnette viewer.

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Reminders

First, if you received a renewal letter a few weeks ago, you can save us the expense and nervous anticipation of sending you reminder cards as your membership edges slowly but inexorably toward the brink of expiration—first when you reach “01” issues remaining, then when you reach the dreaded “00” issues remaining (according to that number out on the right edge of your *Stereo World* address label). Letting your membership expire would mean missing some great upcoming features, among them:

- Two articles observing the anniversary of World War One's start, one about the personalities behind the war and one about its terrifying yet avidly stereographed artillery.
- The stereo significance of frogs jumping (for a W3) plus a praying mantis watching a polarized 3-D movie.
- A detailed study of the character Biddy serving tomatoes undressed in an amazing number of stereoview sets from various publishers.
- The art of paper sculpture stereographed for anaglyphic reproduction.

David Kuntz reminds everyone that there's still time to enter the 2014 3D Digital Imaging Showcase, sponsored by Nvidia. The Grand Prize winner will receive a 3D Vision compatible display and 3D Vision glasses kit (approximate \$600 retail value) plus \$100 cash. The Second and Third Place prizes are \$50 cash each. All entries will be shown at the upcoming NSA Convention in Murfreesboro, TN. In addition, winning images will be posted on NVidia's 3D web site, www.3dvisionlive.com/content/2013-digital-image-showcase. For complete entry information, go to www.3d-con.com/digcomp.php. Submission deadline is June 9, 2014.

Nick Graver reminds us that it's been a long time since we mentioned the amazing and huge on-line Robert N. Dennis (no relation) Stereoview Collection at the New York

Public Library, http://digitalgallery.nypl.org/nypldigital/explore/dgexplore.cfm?col_id=361.

Autostereo

This issue's article about the “Autostereoscopic Display With Dynamic Backlight” provides a look at just one of the many concepts being promoted for this technology. This one may take off and be bought out by some huge corporation for a bazillion dollars, or never be heard of again. Time will tell, but it's interesting to see a new concept (or at least a fresh approach to a previous concept) at its introduction, and to see stereographic proof of it's basic idea functioning.



Editor's View

Comments and Observations

by John Dennis

A Dash of Depth

Our earlier editorial concerning the use of the dash in “3-D” didn't exactly inspire an emotional firestorm, but contributor Jeff Boller did write in with the following.

About the “3-D” vs. “3D” debate in the editorial... I believe it should be “3D” for two reasons:

- 1) There's no situation where it looks awkward, like in 3D-Con.
- 2) Twitter! When you're limited to 140 characters to make a point, every character counts. I say, drop the dash! ☺☺

If you have comments or questions for the editor concerning any stereo-related matter appearing (or missing) in the pages of *Stereo World*, please write to John Dennis, Stereo World Editorial Office, 5610 SE 71st Ave., Portland, OR 97206.

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Please start my one-year subscription to *Stereo World* magazine and enroll me as a member of the National Stereoscopic Association.

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The Only National Organization Devoted Exclusively To Stereo Photography, Stereoviews, and 3-D Imaging Techniques.

“Another 3-Der bights* the dust”

Chuck with his “Sput” enjoying a day of creative photography at the old Bremono Bluff coal fired power plant near Fork Union, Virginia in the spring of 2012. Fuji W3 source image.



This was the subject line of the email that Chuck Holzner sent to me late last September. I opened the email wondering who had passed away this time, amongst our many elderly 3-D friends. He wrote: “Seems that I now have Pancreatic cancer stage 4 and am expected to leave here in 3 to 5 months.”

With his inimitable dry sense of humor and typical understatement, Chuck thus announced his pending “departure,” possibly within the year. Chuck elected to not fight the cancer with the usual chemotherapy and radiation, instead to travel and spend the time taking care of his “bucket list.” This decision probably helped him to live longer, and immeasurably improved his quality of life.

I asked him how he felt, and he answered, “Pretty good, I haven’t had so much excitement in ten years!”

He first traveled to Wyoming to go hunting with his son Kirk. Thereafter

he made some more trips to visit old relations and friends up and down the East Coast. At home, he was very fortunate to have many friends and family close by, who were there with him up to the very end.

I was privileged to be able to visit with him numerous times over the

course of his last five months, bringing him new medium format 3-D slides to show, and also spending time reviewing his significant MF3D collection with him, and generally discussing matters related to 3-D and the disposition of his images.

(Continued on page 24)

GONE MADDD

by AARON WARNER
3-D by Charles Barnard



“YOUR NEXT 3-D MOVIE WILL HAVE A MORE RETRO LOOK SO THAT MEANS LESS FLYING SEQUENCES AND MORE THROWING PING-PONG BALLS AT THE VIEWER.”



“YOUR NEXT 3-D MOVIE WILL HAVE A MORE RETRO LOOK SO THAT MEANS LESS FLYING SEQUENCES AND MORE THROWING PING-PONG BALLS AT THE VIEWER.”

* bight: noun: bight; plural noun: bights
1. a curve or recess in a coastline, river, or other geographical feature.
2. a loop of rope, as distinct from the rope’s ends.

Dear Fellow NSA Members,

We live in a beautiful world with wonderful changing light, and the ability to see and enjoy it in three dimensions. And for those of us as collectors, photographers, and enthusiasts of stereoscopic images we have an especially rich world which is a pleasure to share with each other. We can see images over 160 years old and have a feeling that we are "right there", just as we can capture new images and later remember when we really were "right there".

The National Stereoscopic Association is one way that we share those 3-D images, see what was done to create them in the past, and learn about all those wonderful new techniques and gadgets that can make our interests even more enjoyable. But like any organization NSA requires dedicated members, many volunteer workers, and the funds to accomplish activities so we can share with each other and with the newcomers who continue to discover "stereo" for the first time.

The NSA is very grateful for each of our members and especially salutes those who have given donations of their time, their contributions in money, and their voluntary service for various committees and tasks. Each year we recognize those who have contributed funds beyond their membership fees, donations that for the past year have totaled \$5,868. These funds are especially beneficial for the continued creation, printing, and distribution of our outstanding publication *Stereo World*. Now in its 38th year of publication we can proudly say that no other periodical has provided as much information about the subject of stereoscopy, both past and present.

If you wish to contribute to NSA in the form of money, it is very easy to do so. A good time is when you renew your membership either by mail or by PayPal. But you can also give donations at any time. Small contributions of perhaps \$10 or \$20 can be quite helpful, and much larger contributions won't be turned down! Our Board of Directors, Officers, and key Staff are continually looking for ways to save costs while providing even more benefits to all members. Your contributions can really help.

The NSA has three primary ways that we contact each other. Our publication *Stereo World* places us together every two months, six times a year. Our second contact should be our newly revamped website, (stereoworld.org) that is readily available at all times. Do you need to know a contact person, information about future events or sister 3-D organizations, or find dealer information? Check the website! Learn about the Stereoscopic Society of America that is closely tied with NSA and shares in many NSA activities.

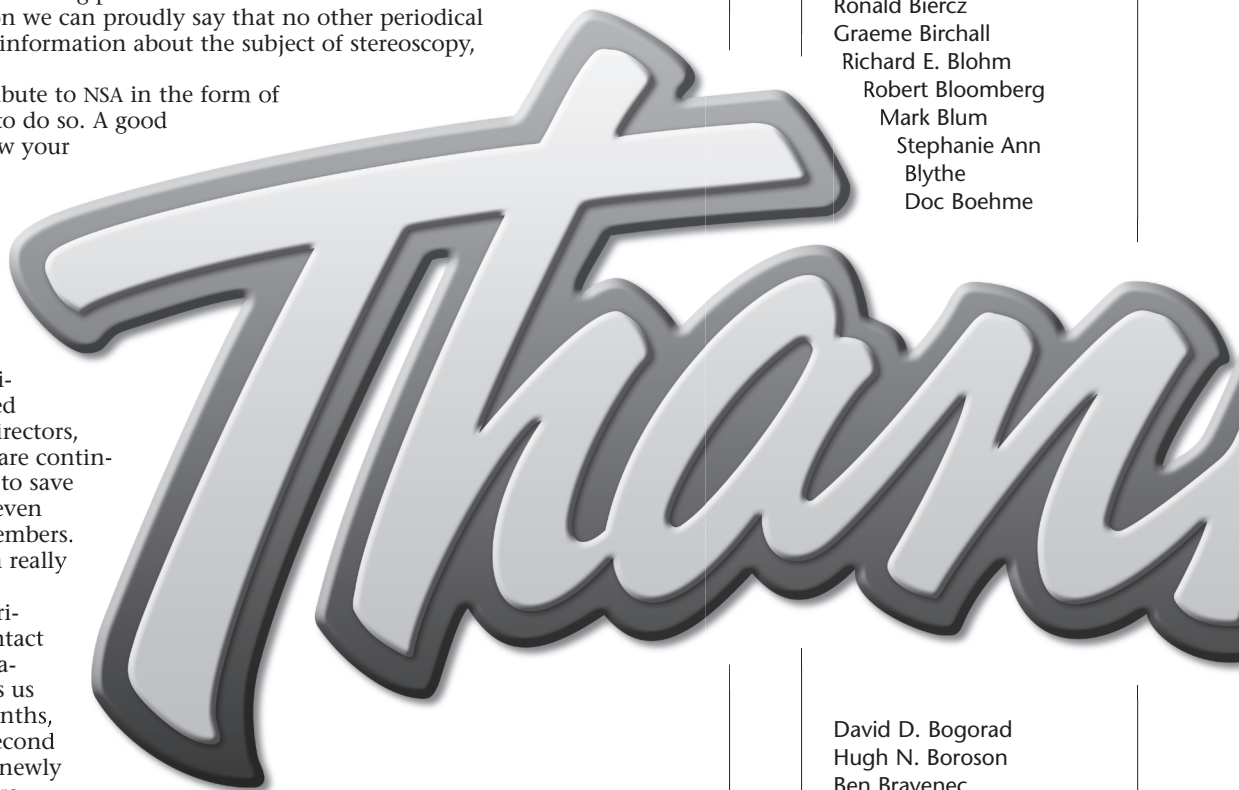
Our third connection to each other includes both local regional meetings in different areas as well as our annual convention. The 40th National Stereoscopic Association Convention will be held July 8-14, 2014 at the Embassy Suites in Murfreesboro, Tennessee. In the last few years this Convention has been affectionately called "3D Con" by many, and certainly that is a great description. Located a few miles from Nashville (Home of Country/Western Music), Murfreesboro is home to the Stones River National Battlefield. You will have many opportunities for sight-seeing, photography, and service to NSA. We always need 3-D programs, workshop presenters, dealers, auction items, and workers. See www.3d-con.com or stereoworld.org for information. Now is the time to register!

Why have I mentioned all these activities? So you can join in them, volunteer your time and expertise, and share in our favorite interests. Look for me at 3-D Con, wearing a badge that reads "Don't yell at me, I'm a Volunteer!" Thank you once again for all your support and contributions.

Best wishes,
Lee Pratt
NSA President
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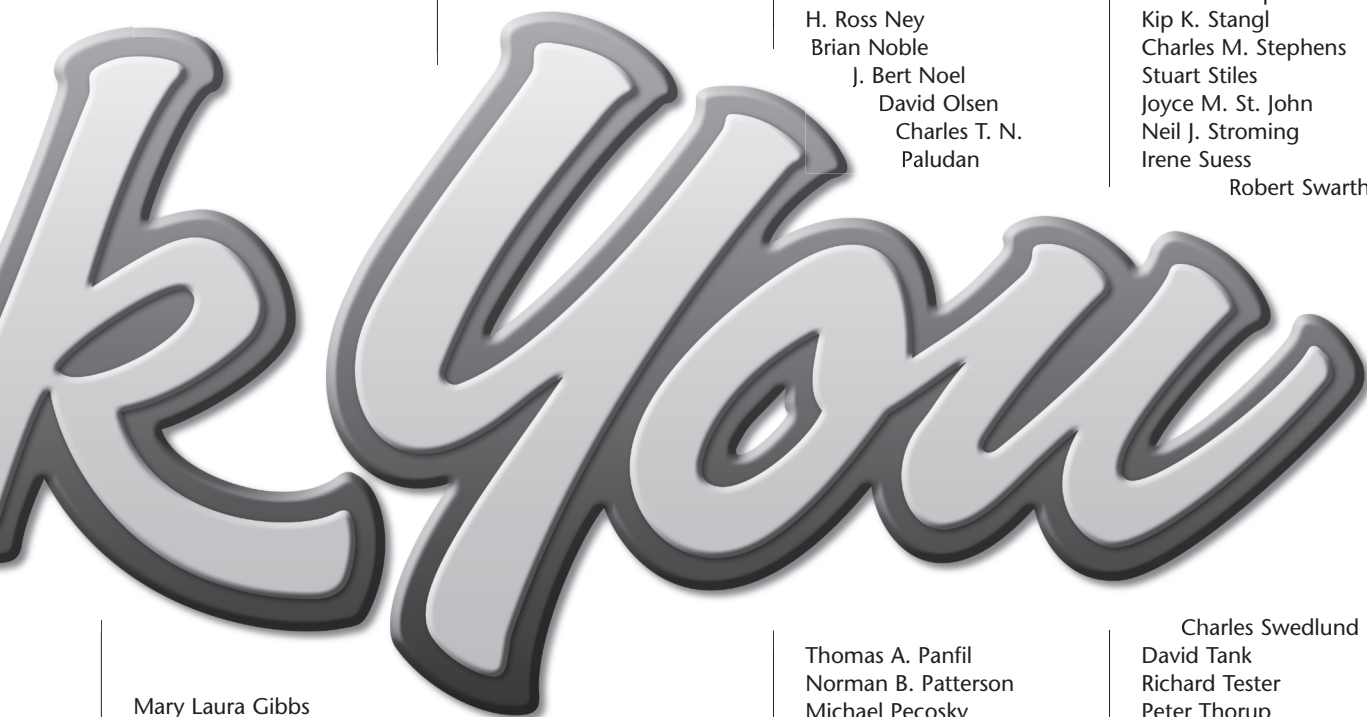


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William Culp Darrah: Paleontologist, Professor, Stereographic Pioneer

by Richard C. Ryder

This year marks the fiftieth anniversary of the publication of William C. Darrah's iconic *Stereo Views: A History of Stereographs in America and their Collection*, the groundbreaking 1964 work that in many ways inaugurated the serious scholarly study of stereographs. On a more somber note, this month also marks the 25th anniversary of the death of its author, that remarkable man who introduced so many to the wonders of three-dimensional photography, not just as an art form but as an important means of historical documentation.

For those of us in the NSA who were privileged to know him, this is the guise in which he is most familiar. But there was far more to the man than this. Therefore, it seems

.....
The 16-year old Bill Darrah as an Eagle Scout in Pittsburgh in 1925. Darrah earned an unbelievable 68 Merit Badges as a scout and long maintained an interest in scouting.



particularly appropriate at this time to take a few moments to reflect on the multifaceted career and widespread interests of this true stereoscopic pioneer.

William Culp Darrah was born in Reading, Pa., in January of 1909. Within a few short years, his inquisitive nature led him into the world of stamp collecting, which became a lifelong passion. By the time he was about eight, he had expanded his interests to include minerals, to which he was exposed in the area around Bethlehem, where the family now resided. Encouraged by his father, this fascination led in turn to a serious interest in geology.

By this time, Darrah and his two brothers had all become "pack rats" of sorts, eagerly collecting all manner of natural objects that caught their fancy. On one occasion, a neighborhood boy showed up at the door asking for one of Bill's brothers. When Mrs. Darrah informed him

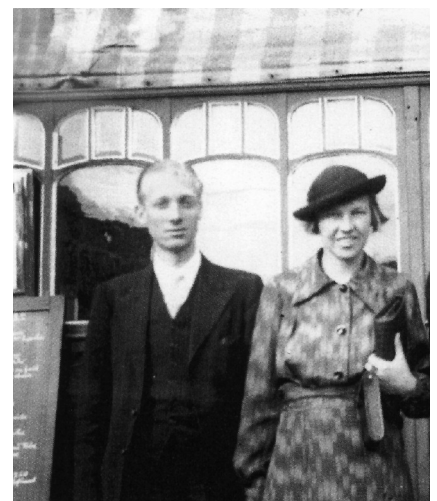
.....
The young grad student at work at the University of Pittsburgh's Carnegie Museum. It was during his college days that Darrah first became fascinated by the exploits of geologist and Grand Canyon explorer John Wesley Powell, the first step in the road to Bill's serious study of stereo views.



that her son was not at home, the lad responded: "See that he gets this," at the same time thrusting a live snake into her startled hands. Bill was quickly called on to take charge of the situation. Life in the Darrah household was anything but dull.

By 1925, now living in Pittsburgh, Bill had become an Eagle Scout, acquiring an astonishing total of 68 Merit Badges, one of which was the rarely awarded one in Mining, which leaned heavily on a knowledge of geology and mineralogy. Yet, in his teens, Bill encountered a prolonged period of ill health, including scarlet fever, severe skin allergies, and near-fatal double pneumonia, causing him to miss a full year of school and

.....
Newlyweds in the Netherlands: Bill and Helen at the Sixth International Botanical Congress in Amsterdam in the autumn of 1935. The pair spent part of the trip, which helped to solidify Bill's reputation as a rising star in the field, crawling around in the depths of coal mines in search of plant fossils. Ah, well, Theodore Roosevelt had actually abandoned his young bride on their honeymoon to go off and climb the Matterhorn!





*William Culp Darrah (1909-89), one of the foremost paleobotanists of the 20th century, biographer of Grand Canyon explorer John Wesley Powell, pioneer in the scholarly study of stereographs, and one of the founding spirits behind the National Stereoscopic Association; his academic career spanned from Harvard to Gettysburg College. Taken in 1977, the year that saw the publication of *The World of Stereographs*. (Photo by Mason Smith, Bill's son-in-law. All 2-D photos courtesy of Elsie Darrah Morey)*

leaving his lungs permanently impaired. Undaunted, the boy turned to reading, for which he had a profound gift, both in terms of speed and comprehension.

Darrah entered the University of Pittsburgh in 1927, emerging four years later with a B.S. degree in geology and a minor in botany, thus set-

The "wunderkind" in action at the Harvard Botanical Laboratory in 1937: a youthful Darrah demonstrates the "peel technique" he developed for the enhanced microscopic study of thin sections of plant fossils preserved in coal balls of late Paleozoic (Carboniferous) age.



ting the stage for his monumental career as a paleobotanist. It was here that he first became fascinated with the pioneering work of John Wesley Powell, a Civil War veteran who, having lost an arm at the battle of Shiloh in 1862, went on to explore the Grand Canyon and become Director of the U.S. Geological Survey. It was here too that Bill first visited Pithole, a ghost town of the early petroleum boom in western Pennsylvania. Both would become topics for later books by Darrah.

During the early 1930s, as the country sank ever deeper into the Great Depression, Darrah continued his studies, now pursuing graduate work thanks to a Fellowship at the University's Carnegie Museum. The bulk of Bill's work involved studying the plant fossils of the Late Paleozoic Carboniferous or "Coal Age," a time roughly a hundred million years before the appearance of the first dinosaurs.¹ It was also a time before flowering plants or even conifers, when great swamps of tree ferns and other primitive plants covered the land for tens of thousands of square miles and the atmosphere had a much higher oxygen content than today. The great "coal swamps" were home to giant labyrinthodont amphibians (think an eight-foot

Darrah proudly displays the set of silver commemorative medals presented to him by the Governor of Arizona during the 1969 Centennial of John Wesley Powell's first Grand Canyon expedition. Darrah's monumental Powell of the Colorado, published in 1951, was the first major study of the Union Army veteran and Western explorer.



long cross between a toad and a salamander on steroids) while the super-oxygenated atmosphere removed the respiratory limits on insect size, resulting in spiders the size of house cats and dragonflies with a three-foot wingspan.

This was not just an esoteric study either. Coal, like petroleum, is essentially the remains of extinct plants (hence, the term "fossil fuels") and identifying the specific makeup of such floras was an important tool in helping companies locate such energy resources.

Between 1931 and 1934, Darrah pursued, with equal enthusiasm, both his studies and a fellow student, a budding zoologist named Helen Hilsman whom he had met in a freshman English class at Pitt, with the duo marrying in December of the latter year. Although they had lived within a few miles of each other, they had attended different schools and had not previously known each other. Fortunately, Helen was also an avid fossil collector; they had even been members of the same biological collecting club (plants and animals as well as fossils) while in college. The pair were thus well suited and, as Darrah's career as a research paleobotanist blossomed, Helen often doubled as his assistant.

It was during this time too that Darrah became friends with another young grad student, a brilliant invertebrate paleontologist and stratigrapher working at the University of Oklahoma at Norman. Darrah had been asked to serve as a guide for a visiting Russian paleontologist, Taisia Stadnichinko, then touring fossil sites throughout the United States. Together the pair journeyed to the strata of the Carboniferous-Permian

Bill and Helen Darrah in his library in their Gettysburg home in 1970. It was here that much of Darrah's writing on photographic history was done. Helen too was a professor at Gettysburg College.



border in western Oklahoma and there Bill became acquainted with the young T. K. "Tex" Treadwell, soon to become an authority on fossil shells. Darrah and Tex thus knew each other long before either developed a serious interest in stereographs.

It was also in 1934 that Darrah transferred his activities to Cambridge, Mass., accepting a position with the Botanical Museum at Harvard University. Although his primary work remained the study of plant fossils, within two years Darrah had also been enlisted to teach elementary biology to incoming freshmen at the University itself, among his students being *both* future President John F. Kennedy *and* his brother Bobby, the future Attorney General, Senator, and Presidential candidate! Yet, while both Kennedys were capable of excellent academic work when they applied themselves, they did so only in courses that caught their interest and imagination. Sadly, that did *not* include the biological sciences and the future President's record therein was unimpressive at best.

Perhaps Darrah's greatest practical contribution in his chosen field during these years was in the development of a more advanced "peel technique" of preparing paper-thin sections of plant fossils from within coal balls, allowing the specimens to be studied on the microscopic, even cellular level. It was also at this time that Darrah decided to forego pursuit of a Ph.D. degree, partly on the advice of his superior (who also

lacked that academic distinction), it being suggested that concentration of his energies on a narrow dissertation topic might constrain his broader research. Then too, Darrah had already advanced so far in the field that it would have proven nearly impossible to assemble the necessary professorial team to oversee such a doctoral project.

Darrah was already gaining a reputation as something of a "wunderkind," a young prodigy in the field, not just in America but internationally as well. Consequently, in late-August of 1935, the Darrahs sailed for Europe aboard the small, two-funnel liner *Westenland* to attend a pair of paleobotanical conferences in the Netherlands and to examine collections of Carboniferous floras in Belgium and France.² Here, at the behest of the Botanical Museum's Oakes Ames (Darrah's mentor), Bill would present a number of key papers and defend the American position in several international controversies relating to plant succession and geological subdivisions within the "Coal Age." The Darrahs would also spend time collecting in the field with their French and Dutch hosts, obtaining valuable specimens for the Harvard Collection.

In the event, Ames' confidence was not misplaced. Darrah, at 26, more than held his own with his more seasoned European colleagues, many of whom were more than twice his age, at the very height of long, distinguished careers. The new kid had arrived.

Although he already knew many of the participants through prior correspondence and a couple of occasions when Bill had played host to visiting French and Dutch paleobotanists attending conferences in the States, it was largely during this trip that Darrah forged a number of professional friendships that would help to facilitate the exchange of fossil specimens and to integrate Carboniferous studies between America and Europe. Sadly, many of his new friends would suffer under Nazi oppression during the war years.³ The return voyage across the Atlantic in mid-October of 1935 aboard the Holland-America Line's *Statendam* was no picnic either, as Darrah experienced a severe spell of respiratory allergies likely brought on by the bedding in their cabin, and he was forced to spend part of the voyage either on deck or sleeping in a lounge chair in a common area to alleviate the symptoms.⁴

By 1938, Darrah was being encouraged to compile a *Textbook of Paleobotany*, for which there was at the time a great need. The book appeared the next year, but was not an unmitigated success. Under pressure to move things along, the young author had grown careless and had not fully credited the sources of some quoted material, a serious oversight that led to severe criticism, even recriminations, from some of those not properly cited. In today's ultra-litigious society, it might well have resulted in a lawsuit. Instead, apologies and an inserted errata sheet with the desired correc-



Photographed at his home on Baltimore Pike in Gettysburg in 1975 by Nicholas Graver, William Culp Darrah holds a copy of his historic "blue book," the original, classic Stereo Views, published in 1964. Graver's visit came a year after Darrah's retirement from Gettysburg College and two years before publication of his second landmark work on 3-D photography, *The World of Stereographs*. Stereo by Nicholas Graver, No. 51 in his series "A Second Century of Stereoscopic Views."

.....
 Darrah examines a group of stereographs in the parlor of his Gettysburg home. Note the organ in the background. On the floor in the foreground, an unusual glass plate stereo view. Despite being blind in one eye, Bill was still able to assess the three-dimensional quality of a view with almost uncanny precision. Stereo by Nicholas Graver, No. 50 in his series "A Second Century of Stereoscopic Views."



tions resolved the issue. Nevertheless, it was a painful experience, both awkward and embarrassing, and one that Darrah was unlikely to forget.

In 1942, with World War II underway, Darrah put his academic career on hold, taking a leave-of-absence from Harvard to do defense research for Raytheon Corporation, work that involved the development and application of military radar for both naval and aviation purposes. By now, in addition to Helen, he had two young daughters, Barbara and Elsie, to support.

Yet ill health was again about to intervene. Ever since the late 1930s, Darrah had been experiencing recurring eye problems involving ulceration of the cornea. During the war, Bill had been ineligible for military service, having been classified 4-F, let down, curiously enough, not by his troubled vision but by his feet. Raytheon had been an alternative way to make a meaningful contribution to the war effort. After the war, although his leave-of-absence remained in effect, he chose not to return to academe, voluntarily giving up his position at Harvard to provide an opening for another talented young prodigy, Elso S. Barghoorn, who went on to become an exceptionally renowned paleobotanist in his own right.

Although he did consider other academic options and was even offered a position as Associate Professor at Michigan State, Darrah instead chose to remain at Raytheon until 1951. Eventually, Bill's continuing

eye problems resulted in a series of operations and, what was even more frustrating for this man of active mind, for the better part of a year kept him in the dark—literally. Confined to a darkened room, he used the time to write, or rather dictate with the aid of a secretary, his masterly biography of Grand Canyon explorer John Wesley Powell.

Among the many larger-than-life figures from the formative years of the American West, Powell had largely been lost in the shuffle, an omission Darrah now set out to rectify. Having already written several articles on Powell and other members of his expeditions, he produced in 1951 a definitive biography, *Powell of the Colorado*. The book was widely praised and, many years later, in 1969, Darrah would attend and speak at the Centennial celebration of Powell's first Canyon exploration, being introduced by none other than Arizona Senator and former Presidential candidate Barry Goldwater. On the occasion, the state's Governor would personally present Darrah with a set of silver Powell commemorative medals.

Darrah also assisted in designing the Powell commemorative stamp issued by the U.S. Postal Service that year. Given his long-standing interest in stamp collecting, this must have been a particularly satisfying achievement.

Alas, back in 1951, the eye problems did not go as well. Although he no doubt wished to remain at Raytheon, Darrah emerged from his

forced confinement with his left eye badly impaired. This had at times proved embarrassing, as on one occasion when he accidentally stumbled into a draftsman, one of several Bill supervised, jostling the man and causing him to spill ink across a key project upon which they had been working for some months. To minimize the risk of a repetition and given that Darrah was an excellent public speaker, the company now often employed him in a public relations capacity. Yet, although he proved quite adept in that role, Bill found it increasingly frustrating as time went on. It was time for Darrah, at the age of 42, to reinvent himself yet again.

Encouraged by his initial success with the Powell biography, he now determined to devote himself to independent research and writing and moved his family to a modest farm on the southern outskirts of Gettysburg, where Helen had found a substantial house that met all their rather stringent requirements, subsequently acquiring the property without Bill's ever having actually seen it! Here he would have easy access to the many great museums and libraries from Philadelphia and Baltimore to Washington, D.C., and to the National Archives as well.

But why *specifically* Gettysburg? Although the primary reason had been the proximity to those many research facilities, was that the only reason? Given Bill's middle name, could there also be a connection

(Continued on page 28)

Autostereoscopic Display with Dynamic Backlight

by Alexander Roth

Stereoscopic television is an exciting development although it has met some resistance due to the undesirability, with some viewers, of requiring glasses. Some autostereoscopic (no glasses) 3-D TVs have been demonstrated but are considered years away from mass production.

The most common approaches to autostereoscopic TV are based on either lenticular lenses or parallax barrier strips both requiring strips of left and right images behind the lenses or barriers so arranged as to direct light to the correct eye(s) as required. It has become popular to use not just two views of a scene, but more, possibly seven or more views spread across a distance somewhat wider than inter-ocular spacing. A viewer located within this range of multiple views, in the "sweet spot", observes the 3-D image.

Developers are racing to solve the problems inherent with these techniques. Screen resolution is wasted because an eye sees fewer than half the pixels during any image field. Furthermore, the need to find sweet spots is annoying and is not an ideal property for the TV of the future.

Recently issued U.S. Patent #8587641 proposes a configuration shown, highly simplified, in Figure 1. A transparent SLM (spatial light modulator), basically an LCD screen, is shown at (5). This screen is kept completely opaque except for several rapidly selectable narrow vertical clear (image) areas, two of which are shown at (25) and (26). Each of these vertical picture lines, VPLs, is a vertical element of the image, and may, depending on screen resolution, be one or several pixels wide.

A backlight panel (3) consists of an array (6) of brilliant, selectable and briefly lit narrow lights one of which is shown lit at (22). In an example design explained in the referenced patent, 570 lights are used and several widely separated lights are generally lit simultaneously. Eyes, for example two left eyes, (23) and (24), in the viewing region, receive light originating from the light-array and passing through the SLM which at the moment would show a left side scene.

The spacing between the two panels, the width and spacing of the lights, and the various parameters of the SLM are carefully selected to allow the light from image strips contained in single VPLs, when the correct light is selected, to enter the desired eye and no other eye. Fig. 1 shows that when light (22) is lit and VPL (25) is selected, eye (23) sees VPL (25). Similarly for light (22), VPL (26) and eye (24).

A vertical sheet of light rays (27) entering eye (23) is shown, for simplicity, coming from one point along the VPL (25). However, because the full vertical length of VPL (25) when selected, is transparent, and light (22) extends a little more than the vertical length of the VPLs, light emanates from all points along (25) thus allowing the eye at (23) to view the entire length of VPL (25).

The positions of all eyes in the viewing region are tracked with state of art eye trackers to allow the selection of lights and VPLs to be aimed at selected eyes. The light sheets are designed to be narrow enough so as to enter only one, the selected eye. By properly configuring the elements

shown in the figure, every left and right eye of the several viewers can be made to see the full length of every appropriate left or right VPL of the entire image on the SLM as a result of high speed VPL selection and light selection.

The light leaving the screen might be described as a rapidly changing dynamic light field of vertical sheets of light jumping from eyeball to eyeball and illuminating every VPL within an image field time interval. This entire process takes place for the left eye taking, for example, 1/60th second, and then repeats for the right eye providing a complete autostereoscopic image.

Current transparent LCD image panels would not be fast enough to produce both an image and the high speed switched clear/opaque stripes required. Thus a second SLM (not shown), using a high speed technology, such as bitable ferroelectric LCDs, in close contact with the image SLM, could generate the clear/opaque strips while the image SLM operates at normal, slower, TV speeds.

The patent describes a general digital control approach to accomplish the required light, and VPL switching to produce field image rates of, for example, 60 hertz yielding full autostereoscopic images at acceptable flicker rates. Since eye tracking is employed, there are, of course, no sweet spots. Any position is a sweet spot.

The light array panel (3) might have been problematical just a few years ago. The lights would have been xenon, or similar arc type lights to provide the speed and intensity.

Fig. 1.

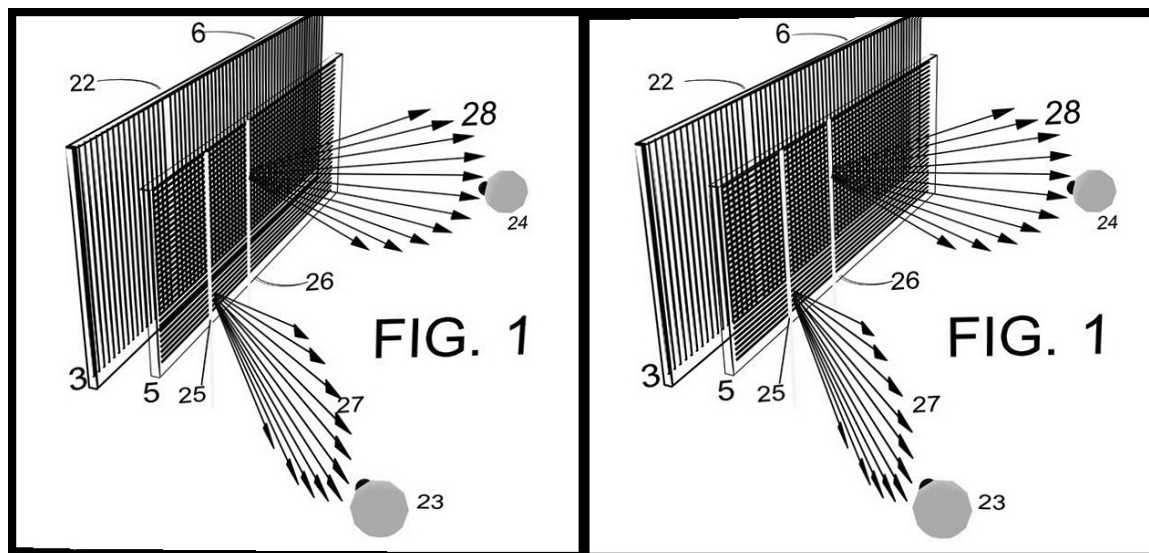
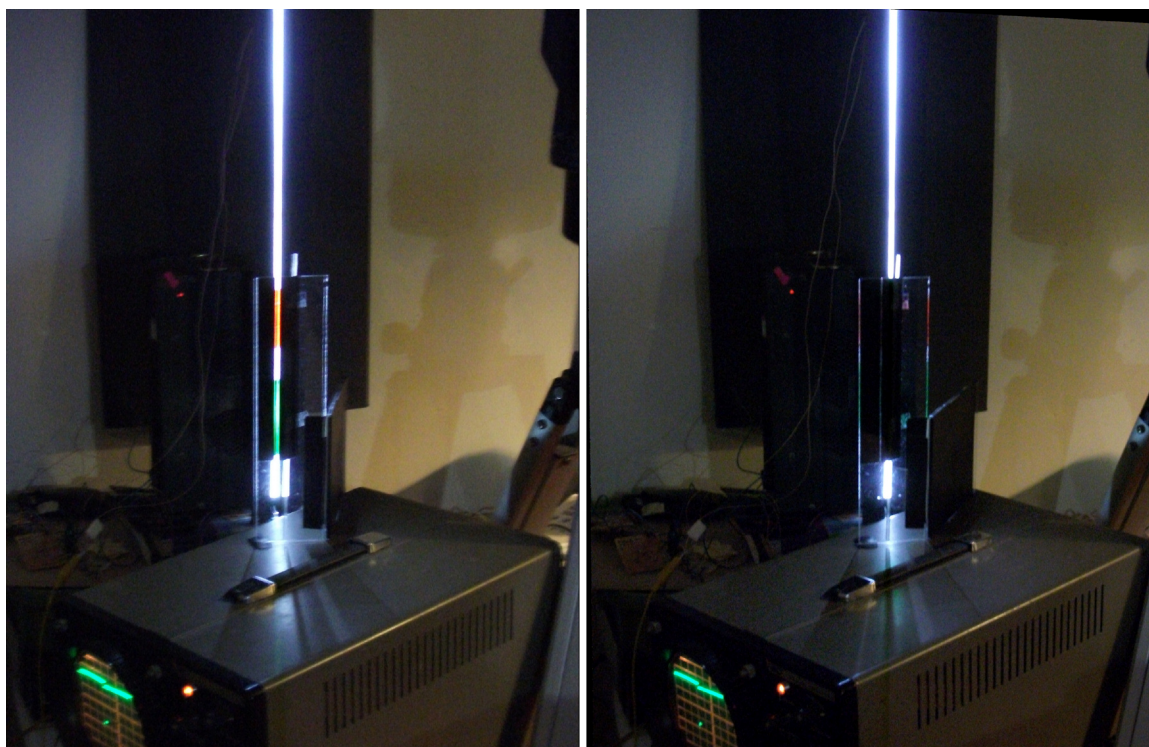


Fig. 2.




The high speed, high voltage switching would have created special problems as would the resulting electrical noise from the firing of the lights at hundreds of kilohertz rates. The appearance of super intense LED emitters makes possible an acceptable light by injecting light into each end of a suitably coated thin acrylic rod.

An experimental light matching the light in one of the design examples in the patent is shown in Figure 2. The photo is of a simulated VPL, shown with a red, white and green section, lit from five inches behind by a three mm diameter acrylic rod (as described above) and pho-

tographed at five feet. The camera's stereo separation is two inches and shows clean separation of the "pixels" between the two "eyes" eliminating any question of diffraction causing left-right crossover. The light in the photo tends to bloom and exaggerate the dimensions of the real light. The "simulated" VPL is a one mm transparent gap in an opaque area, with red, white and green bands occupying about $\frac{1}{3}$ of the height of the light. This approximately corresponds to an example in the patent based on a 52 inch, 1280 x 720 LCD, with array lights of 0.115 width. The general design is scalable up to much higher resolution.

The position of the camera was set to duplicate the condition where the left eye was as far left as the point where the VPL begins to disappear demonstrating that even at that point the right eye receives little or no light.

The light in the picture is flashed on for 100 microseconds at a 30 HZ rate producing an extremely intense burst for that brief period close to the required amount, when averaged, needed for an adequately bright picture.

The patent may be seen at: www.google.com/patents/us8587641. The author-inventor may be contacted at AlexR@ieee.org. 

DIY Underwater 3-D Camera Housing

by Jan Cocatre-Zilgien

There are many underwater camera housings available for 2-D cameras, but there are very few (and expensive ones) for 3-D cameras. In particular, there are none for the Panasonic Lumix DMC-3D1 with its inter-lens separation of about one inch, which is ideal for close-up pictures of coral and sea creatures when snorkeling. This article describes how to make your own camera housing with components available anywhere. It is essentially a section of pipe with a glass lens on one end, and a rubber kitchen glove on the other end. The glove allows you to hold the camera in the housing and to access all its controls.

How to Make the Housing

Most parts can be found in home improvement stores. Get a white PVC 6" x 4" "sewer reducer" with a wide

end of 6¾" and a narrow end of 4½" as its outer diameter. When you select the reducer in the store, bring your camera to see how well it fits in when passed through the narrow end. (There are other reducers that may better fit other cameras.) Also, pick one that has the most circular wide end. It is not uncommon to have ovals with one axis ⅛" larger than the other.

Put a sheet of coarse (80-grit) sanding paper on a flat surface, and sand the wide end of the reducer until it is flat. On the narrow end, remove any pointy specks or any remaining flashing so that its edge is smooth, to avoid tearing the glove which will wrap around it. At this stage, the inner surfaces of the reducer (but not the sanded edge—mask it out) may

be spray-painted black to limit any internal reflection.

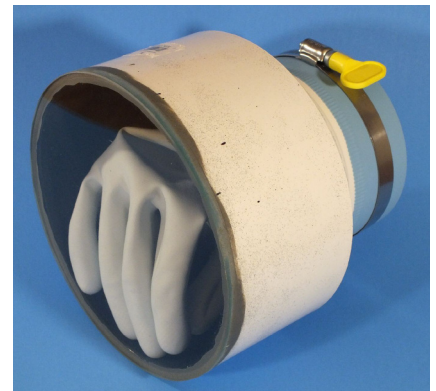
Measure the outer diameter of the widest end, and order a circle of 1/4" thick glass of the same diameter from a glass store, specifying that its edge be smooth to the touch. Don't be tempted to make your own out of transparent plastic, because plain window glass will always be superior in optical quality and easier to maintain. On one side of the glass, sand all around up to ½" from the edge with the sanding paper. This will increase the grip of the seal between glass and plastic. Be sure to vacuum or rinse away any glass and sand particles which could scratch the glass later. It is also important that the sanded area of the glass have no grease on it, so hold the glass by its edge, or from its central area, which can be cleaned later.

Using a two-part marine epoxy, which includes both a resin and a hardener, mix thoroughly a few minutes before application. If you have never used epoxy before, it is recommended to practice mixing and applying it. Place the circular glass with the sanded side up on a flat surface and apply a continuous bead about ⅛" thick all around. Position the reducer on top and jiggle and rotate it very slightly to increase the contact surface. Load the reducer

.....
Pipe Reducer Underwater Camera Housing with Panasonic Lumix DMC-3D1 camera in place.



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The finished Pipe Reducer Underwater Camera Housing with an inside out rubber glove hose-clamped in place.



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A Rainbow Parrotfish.
All stereos by the author,
taken in natural light at
John Pennkamp Coral
Reef State Park, Key
Largo, FL using the
Pipe Reducer Underwater
Camera Housing and
a Panasonic Lumix
DMC-3D1.



.....
A school of Blue Tangs.



.....
An immature Redlight
Parrotfish with sharply
defined scales.



down with at least 15 pounds (a stack of heavy books will do nicely), and smooth out any blobs oozing from the outer edge with your finger. Leave the assembly totally undisturbed for 24 hours even if the instructions say you can manipulate it after 30 minutes. Silicone sealant may be used instead of epoxy to hold the glass, but it is only a sealant, not a glue.

Get large rubber kitchen gloves with extra long cuffs and with a cloth-like white coating inside. Rubber leaves an oily residue on glass, so the inside of the housing lens quickly gets smeared as you manipulate the camera behind it. To avoid this, turn the glove inside out (blow in it) so that the cloth is on the exterior and the rubber is on the interior. Find a SAE size 64 worm gear clamp (or anything reaching 4½" diameter) with a manual thumbscrew, not a plain screw or a nut requiring a tool. Those clamps are often used for the

exhaust of clothes dryers. The total cost of the parts should be about \$35 + tax.

Finally, use a dedicated padded bag to carry the housing around. Some of the most convenient are insulated picnic bags for "six-packs". When cleaning the inside of the lens, do not push against the glass while holding the plastic part, as this puts stress on the epoxy joint. Instead, put the glass down against a towel and clean it while holding the plastic part.

How to use the housing

Before wading or jumping in the water, put on the glove with the cloth side out and wear the clamp as an arm bracelet so that you can slide it down when needed. Position the camera in the housing, and then stretch the cuff of the glove evenly over the narrow end of the housing. With practice this can be done with the other hand, but it is easier with help from a snorkeling buddy. Push

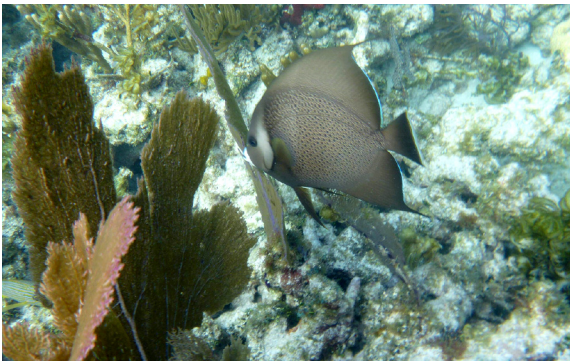
the arm in as much as possible to get rid of excess air in the housing. It is important that the cuff covers the whole cylindrical part of the narrow end, without any creases. After the air is purged and the cuff is stretched evenly around the housing, set the clamp ½" from its end and manually tighten it with the other hand.

Once in the water, hold your camera so that its lens is close to the glass, with your thumb on one side and the other fingers on the other side, using the index finger to press the shutter release. You can also shoot videos (search YouTube.com with "underwater 3d" and my name to see samples taken with this camera housing). It is relatively easy to swim holding the camera with one hand while holding the housing with the other hand. This provides more stability when the surface has waves.

A peculiarity of this housing assembly is that you are unable to



.....
A Barracuda shows
its teeth.
.....



.....
A French Angelfish
with many dots on its
flat sides.
.....



.....
Miscellaneous corals
in Key Largo's John
Pennkamp Coral Reef
State Park.
.....

see either the viewfinder or camera monitor screen as you take the pictures or make movies. After a few trials though, you learn to visualize its effective field of view. You can hold the housing at arm's length (already two feet below the surface) and get the camera closer to its subject while floating on the surface. It also keeps you further away from barracuda teeth, who open their mouth wide when you come too close. If your camera has a touch-screen, disable it. You may want to flip the camera within the housing from time to time to inspect the status of remaining memory or battery life on its monitor screen.

How deep can you go with this camera housing? Although it can

probably go significantly deeper than that, the housing has been tested up to 10 feet. The camera housing is buoyant, so you have to actively swim down to dive deep. The best underwater pictures are taken at close range in less than three feet of water because of the amount of sunlight and the full range of colors. This camera housing is primarily intended for snorkelers.

Once the housing is in place at the end of your arm, it is not possible to remove your hand from it due to suction, or at least without drawing water into the housing and destroying your camera (the SD card would survive, though). You therefore lose the benefit of using that hand for swimming, which may be discon-

certing to some swimmers. It is mandatory to have positive buoyancy, by wearing a short wet suit or a light ready-to-inflate life vest as distributed to swimmers and snorkelers on state park boats. In the same vein, practice putting on your mask, snorkel and fins with your one free hand beforehand. As for any underwater activities, even for snorkeling it is recommended to have a buddy to swim with, like all scuba divers do.

One last thing—going through airport security with your “pipe & clamp housing” as carry-on (recommended to avoid epoxy-jarring knocks) will raise TSA questions, so carry a copy of this article with you to help answer their questions. 📷📷

Don't End Up Flat!

Come To 3D-Con 2014
July 8-14 Murfreesboro, TN
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*Flat metal soldiers fight
on forever at the Stones
River National Battlefield
near Murfreesboro, TN.
(Stereo by David Richardson)*
.....



New Screen

Strong/MDI, a main supplier of Giant Screens worldwide, including the world's largest IMAX screen at the Darling Harbour IMAX in Sydney Australia, is a new convention sponsor. They have donated a 16'x9' screen in their new premium HGA material, smaller than IMAX but the right size for us. We are excited to upgrade our old screen which served us well for eight years, but is now being retired.

New Book

Our Friday speaker will be Denis Pellerin talking about the new book that Brian May and he wrote, called *The Poor Man's Picture Gallery*. It explores the connections between stereo cards, paintings, illustrations and cartoons—their six-month exhibition at the Tate Gallery adds a little class to those genre views! As a teaser, he is also going to be covering the 3-D animated Diableries film and iPhone-iPad application that the London Stereoscopic company is working on.

Lenticulars

Another new sponsor is Micro

Lens Technology, the leader in the field of lenticular engraving and a supplier of a large variety of lenticular sheets. Jim Owens will be giving a two-session workshop on how to produce Lenticular Prints with equipment you already have. Ken Conley will be leading a session on auto-stereo TV and have a demo model. If you are interested in lenticulars, you don't want to miss this year's convention.

Digital Showcase

Nvidia will be sponsoring the 2014 Nvidia 3D Digital Image Showcase again this year. Even if you aren't doing a show for the Stereo Theatre, this is a chance for everyone to share six images with the other convention attendees. In addition, winning

images will be posted on NVidia's 3D web site, www.3DvisionLive.com. See www.3d-con.com for details and awards.

Auction

There is still time to enter items in the spotlight auction. Contact Bob Duncan (oldimage@AOL.com) for more information or get the form from the convention website www.3d-con.com/.

This will be my last year as boss of the screen setup team. If you are interested in taking that over, contact me. It is a bit like setting up a circus tent, but without the carnies.

Bill Moll

WHMoll@aol.com

(423) 702-5779 ☎



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Logo by Rob Ellis
.....

Easy Aerial Hypers with the Fuji W3

by Mark A. Willke

Hyperstereo views have been an interest of mine for nearly three decades. I find it fascinating the way an increase in the spacing between the lenses that capture the left and right images can bring out shapes and textures of large areas in 3-D that are not visible using normal eye-spacing. (And the feeling of viewing a miniature model in 3-D is also a lot of fun!) I've made many such views while standing on solid ground (or at least on solid observation decks of buildings and other structures), but being a very infrequent flyer, I had never taken any hyperstereos from the air. That changed a year ago when I was invited to fly from Portland to Phoenix for a visit with family there.

I had acquired a Fuji W3 stereo camera a couple of years earlier, after the processing for my old standby Kodachrome was shut down. I often used the W3 in automatic mode, but knew it had other optional settings, including some that I was not very familiar with. I got out the camera manual to brush-up on its various

settings and found that an "Advanced 3D" setting on the camera offers two different specialty modes. Both of these involve shooting two separate shots with only the camera's left lens, and then combining those two shots into a single stereo image. The assumption is that you (and the camera) will be moving between the two exposures, providing the needed difference in vantage point between the two shots.

The "Advanced 3D" settings sounded like just what I needed to grab some hypers from the plane during my upcoming journey, so I decided to give it a try. I specifically purchased window seats for both segments of my round trip, and made sure that I would be located on the side of the plane opposite from



With the Fuji W3's dial set to "A3D" (Advanced 3D), sequential hyperstereo images are almost automatic. (All photos by the author.)

the sun, so that I would not be looking directly into it. Instead, it would be shining from behind me, illuminating the ground below. I also was careful to select a seat toward the back of the plane, avoiding the seats directly over the wing where the view out the window would have been ruined by the wing itself. With a couple of extra batteries in my pocket and my W3 hanging from my neck, I was ready for the flight to begin!



The Grand Canyon, Arizona. Some of the cloud's shadows are doing strange things in this view, due to movement of the clouds between exposures.

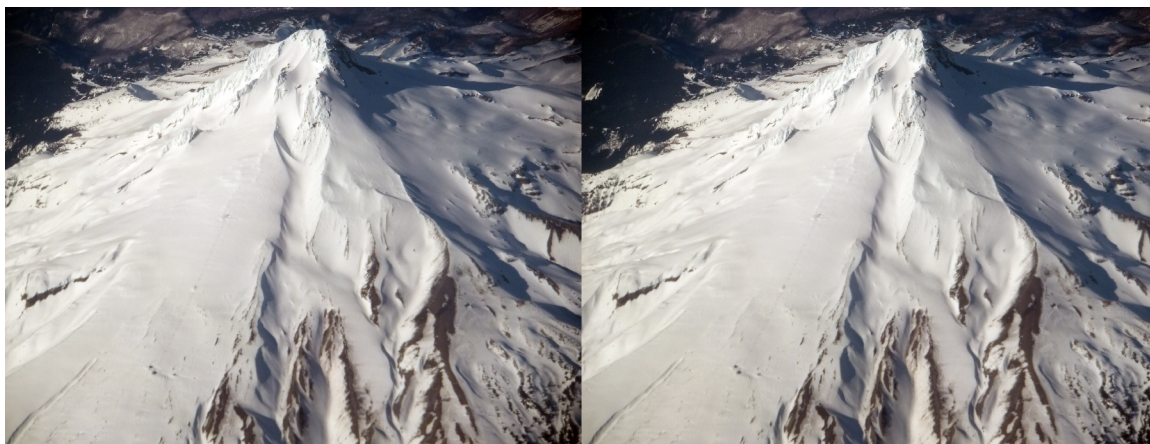


Taken with the camera more zoomed-in, this may also be part of the Grand Canyon.

.....
 This view north of Portland shows part of Sauvie Island along the left side (with the small bridge over the river providing the island's only access for auto traffic.) The tree-covered hills that extend up to the upper right corner are part of Portland's Forest Park.



.....
 Mt. Hood, Oregon. Shortly after leaving the Portland airport, I had been concentrating on shooting several mountains far in the distance, but then happened to glance down and saw that we were passing right over Mt. Hood! After a few quick changes to the camera's interval time, I managed to capture a total of two stereo views as we flew over.



Setting the Camera

The "Advanced 3D" mode is selected by rotating the dial on the back of the camera to "A3D". Once the camera is turned on in that mode, pressing the menu button brings up several important options that need to be set in order to create successful hypers. The first of these is "Shooting Mode", where you choose either the automatic "Interval 3D

Shooting" mode or the manual "Individ. Shutter 3D" mode. The "Interval 3D Shooting" mode automatically takes a second shot at a fixed interval after you shoot the first shot, while the "Individ. Shutter 3D" mode requires you to push the shutter button once for each of the two photos you are taking. Both modes include a helpful visual aid for aligning the second shot with the first. After the initial exposure has been made, it is displayed on the screen as a sort of ghost image superimposed over the current live view as seen by the camera, so that you can keep the camera positioned just right to align both images as much as possible before the second exposure is made.

I used the automatic "Interval 3D Shooting" mode on my trip, and had very good results with it. If you select that mode, you can then move to the next menu item, which is "3D Interval Time". It is here that you choose what amount of time you want to elapse between the first and second exposures. There are seven different options to select from: "Minimum", "1.0 second", "1.5 sec-

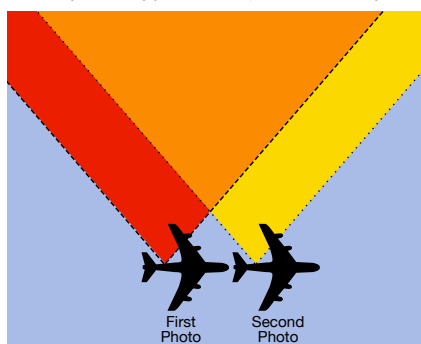
onds", "2.0 seconds", "3.0 seconds", "5.0 seconds" and "10.0 seconds",

After selecting interval time, the final important setting to make is the next one in the menu, labeled "Switch". That's not a very clear name, but essentially it is where you tell the camera if you and the camera will be moving from left to right or right to left as you shoot your sequential stereo pair. From that information, the camera will then know if your first shot is going to be the left image of the stereo pair or the right.

Capturing the Views

Before the plane even left the runway, I was ready to begin capturing images, but I was frustrated to learn that no electronic devices could be used during takeoff or landing. I asked a nearby flight attendant if that included digital cameras, and the answer was, "If it turns on with a switch, it's an electronic device." Once we reached a certain altitude, an announcement was made that we were now free to use our electronic devices, so I instantly began snapping photos.

.....
 This diagram illustrates how the left and right images are taken sequentially as the plane moves along. I've been told that jet planes generally travel around 500mph, so at that speed, a 5-second interval between exposures would put the two vantage points approximately 3,666 feet apart!





.....
 Taken shortly after our early-morning flight left the runway, this view over Phoenix reveals a few parks and open spaces squeezed in between the many houses.



.....
 After climbing higher over Phoenix, this view shows some of the hill formations that interrupt the neat, orderly grid of streets.



.....
 Lake Pleasant, just northwest of Phoenix.

Fortunately, when I was able to make the same trip again more recently, the airline regulations had been relaxed a bit, and as long as our devices were set to “airplane mode”, we were free to use them from runway to runway. I am not aware of an airplane mode on the W3, but I figured it would be safe to use it anyway! I managed to capture several nice hypers shortly after the plane had left the runway, so the new ability to make photographs during that time was much appreciated.

I experimented with using different time intervals between exposures, and soon learned that the best interval seemed to change constantly, depending on how high we were in the air. Shots made shortly after takeoff or as we were coming in for a landing needed very little time

between exposures, since the ground was close and seemed to be moving past very quickly. The “Minimum” interval setting seemed to work best, since longer gaps between shots resulted in too large of separation between the left and right images. As we climbed, longer times could gradually be used, and once we reached our cruising altitude, I got nice results with the 5.0 second setting. I did try using the maximum interval (10.0 seconds) on some shots, but that seemed to introduce too much parallax into those views, making them difficult to view. Five seconds was about as long as I could go between shots.

Since this whole arial hyper project was brand new for me,

.....
 A simulation of the W3’s screen just before the second of the two exposures is made. The first shot is superimposed over the camera’s current live view, to help the photographer align the second shot with the first. Final adjustment will still be needed later, but at least the two images start out covering essentially the same area.



I also experimented with the camera's zoom, making some views at the camera's widest setting and others more zoomed-in. I also tried sometimes toeing-in the camera for the second exposure, and other times keeping it parallel with the direction I was travelling. I could not detect much of a difference in the finished views, but did have to crop more of the parallel pairs to properly set the stereo window. Throw in a variety of interval times between exposures, and I figured that out of the entire assortment of resulting shots, I should at least end up with *some* keepers! I'm sure the strangers sitting next to me were curious about what scenery we were flying

over that kept me busy for most of the flight.

One thing I found myself wishing for while flying along was some sort of GPS unit that would show me exactly where I was and what feature or city on the ground I was over at the moment. I don't own such a device, but there were times when I was dying to know what I was taking pictures of!

Clouds ended up providing some very nice dimension to some of my views, but since they were closer to the plane than the ground was, it was easy to use too long of an interval time in such scenes. When clouds were present, the interval times between the left and right

shots needed to be shortened.

Clouds also sometimes caused some frustration due to their movement between the left and right exposures. The clouds themselves usually did not suffer from such movement, but their shadows on the ground were sometimes in slightly different locations in the left and right views, causing them to either appear as recessed holes in the ground or as strange elevated dark surfaces hovering slightly above ground level!

I was initially puzzled at why some views seemed to include a strange small area of soft-focus when the rest of the photo seemed nice and sharp, but finally solved the mystery. The exhaust and heat coming out of the

I was puzzled by this site between Phoenix and Sacramento, where it appeared something was lighting up the ground. Some internet research revealed that this is the Ivanpah Solar Power Facility, in which arrays of mirrors reflect the sun's light onto central towers, creating heat to run steam generators.



These mountains in California seem to be adjacent to a group of polkadots. The circles are caused by large wheeled sprinkler systems that drive around a central point, irrigating a perfect circle by the time they make it all the way around. The color of the circles seemed a bit more green as we flew over, but whatever crop they were growing may have already been harvested and allowed to dry up.



A closer view of snow-dusted mountains in California.





.....
This unidentified lake in California was enhanced by several layers of clouds.



.....
California mountains and clouds.



.....
This appeared to be some sort of mud flow, but the actual location and circumstances are unknown.

back of the jet engine attached to the nearby wing was causing the ground behind it to appear blurred, so I soon learned to avoid aiming the camera low enough to get near the engine.

Another occasional problem was created when the plane circled around during takeoff or landing, so that the sun was right outside the window, shining in. Sometimes the resulting scene appeared fine, but I later found that reflections of myself and the camera (and general glare on the window glass) were captured along with the scene, ruining the view.

After the Flight

Even with the W3's handy alignment feature available during the creation of hypers, the two resulting images are rarely ready to view with-

out some help from the wonderful free Stereo Photo Maker program. It's auto alignment feature is a necessity when doing this kind of sequential hypers. And being able to easily make a final crop after alignment is also helpful to ensure comfortable viewing of your aerial views.

I also noticed that most of my aerial images seemed to suffer from washed-out colors and reduced contrast, and I still don't know if this is caused by atmospheric conditions or if it is somehow related to shooting through the multiple layers of glass in the airline's windows. Whatever the cause, it was well worth it to take the images into Photoshop for adjustment. Even just an "auto levels" adjustment did wonders, but more complex color and contrast adjustments can also be done.

Some of the hypers that I created with too much parallax were hard to view but seemed too interesting to just discard, so I tried doing some severe cropping on a few of them. By removing the furthest, distant part of the view, I was sometimes able to salvage what was left as a viewable image (regardless of the goofy horizontal format that resulted!)

Give it a Try

I would encourage anyone who has a W3 to try some hypers the next time you fly. The built-in sequential exposure setting is a powerful tool for capturing this type of view. It's unfortunate that Fuji did not continue development of their stereo camera line—who knows what other even better features they might have included on the next model! 📷

When you hear the whistle blowin' eight to the bar

Tennessee, specifically Murfreesboro, is not very far—just a few weeks away. One of the Convention events that I'm particularly looking forward to is the annual SSA banquet. Over the past several years, this dinner suffered from a bit of "mission creep," becoming less and less a SSA centered function. Last year, in Traverse City, I attempted to reverse this trend by introducing (or really, reintroducing) some SSA specific touches. For example, each of the SSA members present was given the opportunity to introduce themselves and speak briefly about their photographic interests. Based on the feedback I received, this worked well, and I'm hoping to extend this idea even further this year.

Real Slides!

At the suggestion of Convention Chair Bill Moll, one element we'll be adding to the Banquet is slide projection. Specifically, each SSA member is invited to bring up to five Realist format stereo slides (transparencies). These will be projected during the banquet using a Brackett dissolver projector, and each maker will be able to provide whatever background information they want to

the audience. Once again, this projector can only handle standard, Realist format (1⁵/₈" x 4") mounted images, and not twin 35 mm (2x2) mounts. This will be the only time that 3-D film images will be projected

during the Convention, so I encourage all SSA members to go back into their archives and dust off their best work.

Another

important SSA event that will occur at the Convention is the judging and display of the 18th Annual SSA Stereo Card Exhibition. After many years of co-chairing this competition, David Goings and Dennis Green have handed over the management reins to new co-chairs, Betty Drinkut and Eugene Mitofsky. Please help Betty and Gene to be successful with the Exhibition by submitting a contribution.

The SSA Stereo Card Exhibition is a PSA sanctioned competition (meaning that awards and acceptances go towards PSA stars and other honors). Each entrant may submit up to four stereo views; card dimensions should be 7" wide by 3½" to 4½" tall. Closing date for entries is July 1, 2014. Entries will be judged at the Convention by NSA Chairman Lawrence Kaufman, Takashi Sekitani and Al Sieg (the alternate judge is Steve Drinkut). For complete entry information, download the entry form at home.comcast.net/~dssweb/ExhibitionResults.htm (you have to scroll down

(Continued on page 32)

The Society and Beyond

The Stereoscopic Society of America

and the Wider, Deeper World of Today's Stereographers

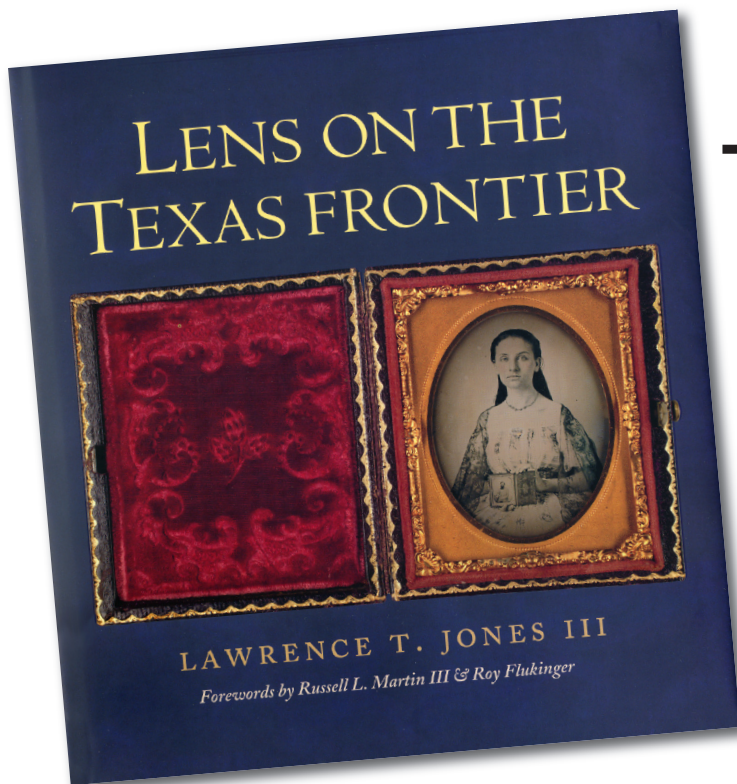
by David Kuntz

"Zoo 3D" by Wolfgang Sell.



"Northern Oregon Coast" (NSA July 2004)
by Peter Jacobsohn.





Texas History in Photographic Detail

review by John Dennis

Regional photo history books can offer more detailed and accurate information as well as more interesting, even previously unpublished photos than even the best books covering an entire country, subject or photographic format. NSA member Lawrence T. Jones has compellingly demonstrated the above with the publication of *Lens on the Texas Frontier*, which features many of the best images from among the 5,000 historic Texas photos in the collection bearing his name at the DeGolyer Library of Southern Methodist University.

The photographic coverage is divided into five chapters: Cased Images (Daguerreotypes, Ambrotypes and Tintypes), Cartes de Visite, Stereographs, Cabinet Cards and Large-Format mounted photos. At 40 pages the Stereographs chapter is the longest in the book, in part because the views are reproduced at full size and often one to a page above detailed historical paragraphs in addition to the captions.

Lens on the Texas Frontier

by Lawrence T. Jones III, Texas A&M University Press 2014. Hardback, 10 x 11" 224 pages, 350 color reproductions, 52 full stereoviews. ISBN 978-1-62349-123-9. \$40 from www.tamupress.com/product/Lens-on-the-Texas-Frontier,7752.aspx.

The author makes quite clear in his very informative introductory chapter "Early Texas Photography, 1843-1900" the significance of Stereography to the photographic documentation of Texas history with comments like; "Based on three decades of collecting experience, I can state categorically that the overwhelming majority of nineteenth-century Texas outdoor photographs were taken in the stereoscopic format."

That would be a welcome enough acknowledgement in nearly any photo history book, but the paragraph a few lines down makes the point even more dramatically.

Seldom, if ever, are these stereoscopic images reproduced in their original three-dimensional format. Some have been reproduced numerous times over the past 75-plus years, but always as single or "flat" images. To get any real sense of the actual look and feel of nineteenth-century Texas, one is required to view these images in three dimensions, because a stereoscopic photograph provides much more visual information than a flat image. It literally is as close as you will ever come to being there and offers a completely fresh look at a much earlier Texas.

Wow—"required" 3-D viewing! No wonder the views are so well reproduced and identified. It makes one wonder if there was some thought of naming the book *LENSES on the Texas Frontier*. Over the years, I've seen a fair number of Texas views but most

of those chosen for this book are rare gems in one way or another. I suspect that most non-Texans had no idea there is a historic suspension bridge in downtown Waco, but here it is, stereographed in 1875 with a windmill incongruously attached to one tower. On the facing page is an 1880 interior view of a railroad coach, the passengers carefully posing for the photographer in a scene as evenly lighted and sharp (from the closest seat to the aisle through the next car) as in any western movie at the point where the train robbers pull their guns and demand all valuables be handed over.

While *The Best Little Whorehouse in Texas* was a hit Broadway musical and film, the book includes what is widely agreed to be among the earliest (or the earliest) view of such an establishment in North America. The A.C. Troutman stereo of a shanty in the shade of a brush arbor near Fort Richardson, Texas is one of several by him from the 1872 Texas Land & Copper Association Expedition showing wagons, rivers, expedition members and Native Americans.

Along with views of towns, railroads and photographers' studios are the earliest known (and extremely scarce) views of a buffalo hunt taken anywhere, showing well armed hunters skinning the hides and smoking the meat. Stereographer George Robertson is shown with a

A. V. LATOURETTE, Photographer.



TEXAS SCENERY.

rifle in front of the buffalo hide lean-to they lived in during the two month 1874 hunt in Taylor County, Texas.

Whether your interest is general photo history, stereography or Texas

African American women washing clothes by Alexix V. Latourette, San Antonio, ca. 1877. This location along the San Antonio River was a convenient place to do laundry and is near today's popular "River Walk" in downtown San Antonio.

history, *Lens on the Texas Frontier* will be an informative and elegant

addition to your library. 📖

Norm Henkels 1930 – 2014

NSA member and 3-D photographer Norm Henkels passed away on Sunday, March 9, 2014 at the age of 83. Norm was very involved with the Photographic Society of America (PSA) and volunteered for many positions and jobs in the 3-D Division, including past director of the Stereo Sequence Competition. Norm had been awarded an Associate honor for his work and a Proficiency for more than 288 acceptances, and he proudly used the APSA and PPSA after his name. Norman Henry Henkels was born on December 8, 1930, son of Rudy and Lidwina (Schmerbach) Henkels and raised on a farm in Luxemburg. As a young man, he moved to Glenview, IL, where he married Marilyn Bucher in 1951. Norm graduated from the University of Maryland in College Park, class of 1952.

He served in the Navy from 1950 to 1954 as an aerial photographer. After his Navy duty, he resided in

Glenview, where he started a successful lawn sprinkler business that he operated until his retirement in 1997. He was also active in the Chicago Stereo Camera Club, where he had been a past president. In 1997, he bought a house in La Mesa in San Diego county and retired there. A distressing chronic obstructive pulmonary disease (COPD) put him on 100% oxygen for the last decade of his life. He won many awards with his 3-D photos and published articles about 3-D photography. In the past year Norm was moved into a convalescent community due to failing health.

In addition to photography, Norm was a model railroader and a collector of photographic memorabilia and equipment, often purchasing items prior to their release. Services and a tribute to his life were held on March 18, 2014 at Our Mother of Confidence Catholic Church in San Diego, CA. You can check out a few



of Norm's images online from an old Pokescope competition at:
www.pokescope.com/contest/Winner_Norm_Henkels.html.

—Lawrence Kaufman 📖

Chuck Holzner

(Continued from page 3)

We even got to shoot a last photo session together, that we had talked about for years, but had not been able to arrange before. All the while, his health was holding up remarkably well! Up until his last two weeks.

Chuck passed away peacefully March 17, 2014, with family and friends at his side.

Chuck and I got started in 3-D photography about the same time, and not very far apart from each other, around 1997. But we didn't meet until 2000, when he answered my photo-3D broadcast for a car-pool ride to the Buffalo NSA convention. I quickly got to know him thanks to his epic storytelling, and his incredible memory for detail in those stories. On that drive to Buffa-

lo (and back), I suffered through hours and hours of stories told... but have long since come to cherish that experience! His unusual facility with stories cannot be duplicated in any other medium, thus is irretrievably lost. I wish I could ask him now for a story about that convention so long ago—he would surely remind me of many experiences that I've forgotten.

In 2005, Chuck joined Brian Reynolds' MF3D folio, and helped secure a place for me in it as well. Over the years he never hesitated to come to my assistance with MF equipment or slide mounting needs. We pursued numerous photo-projects together, most recently our multi-day photography expedition

to the Bremono Bluff power station in 2012. I will be forever in his debt.

I will remember Chuck for his passion on technical matters related to stereo slide photography, notably "mounting to infinity," which he taught me and others to embrace with enthusiasm. Particularly with normal field of view (80mm fl. lenses) stereo slide medium format images, taken with a normal stereo base, numerous advantages accrue to the 3-D image when mounted to infinity. When viewed in an 80mm fl. stereoscope (itself focused at infinity for the person viewing through it), the view becomes perfectly "ortho-stereoscopic." That means your eyes will be parallel viewing infinity points, and will converge

.....
From Chuck's book 3-D Newfoundland (Stereo World Vol. 30 No. 6, page 8), "The cliffs at Cape St. Mary's are some 300 feet high, with a very steep drop to the ocean below. Birds of different species nest at different levels, and attract bird lovers from far and wide." June, 2004, Provia 100F f16 1/50s.
.....



.....
The restored lighthouse at Rose Blanche, the only granite lighthouse in Newfoundland, by Chuck Holzner, August, 2012, Astia 100F f32 1/25s.
.....





.....
Flakes (cod drying racks) once plentiful in Newfoundland. Chuck Holzner, August, 2012, Astia 100F f22 2s.

appropriately for closer objects. Aside from the convergence/accommodation mismatch inherent in all stereoscopes, the view will appear perfectly realistic and comfortable. Another advantage is that when showing a series of slides, your audience will not have to re-converge on scenes with arbitrary deviations/depth ranges. This reduces eye-strain. I can speak from personal experience that this factor is not to be neglected, especially when showing images to 3-D novices (our most important audience!).

Chuck explained to me how this ortho-stereoscopic effect would be true regardless of eyepiece spacing in the stereoscope. As long as the eyepiece lenses are large enough and focused at infinity for the user, no interaxial adjustment is needed (nor desired) for the stereoscope. "Rays" coming from infinity points would exit the stereoscope optics parallel, thus would be perceived the same, regardless of the user's relative eye position or spacing.

Chuck Holzner was also unflagging in his promotion of maximum on-film-deviations much greater than the accepted two or three mm, mounting "double-depth" when needed to include very near points. He demonstrated the feasibility and reasonableness of such depth ranges with many of his photographs, sometimes with a subtle sense of humor; he also produced diagrammatic stereo slides to prove his point. Indeed, his discovery of the usability of such large deviations in the slides led him to realize that the depth range in medium format images is

more essentially limited by depth of field of the lens (at f32) than by any other factor. For example, if you maximized your focus range to include infinity, your depth of field would "run out" at a near distance of about five feet, producing on-film-deviation that was well within what a person could tolerate. Another way to look at it, very practically, is that you could simply use your depth of field gauge inscribed on the lens to ensure that you didn't have too much depth in a view. No other tables needed. (Some limiting definitions and technical variables needed to fully discuss this, such as "circle of confusion," are beyond the scope of this article. The reader is invited to research further.)

Certainly in recent years, Chuck's biggest love in photography had become Newfoundland, where he had endured some military service in his youth, and to where he returned perennially to make photographs over the past dozen years. He has published a couple of stereo books on Newfoundland, and has been working on a "before and after" book matching vintage Newfoundland images with his own modern

views. Alas, this work remains unfinished (one prototype exists). I had the honor of mounting for him the MF3D slides of Newfoundland that he had shot on his last trip there in 2012—among which I found some very beautiful images. I intend to present these Newfoundland slides at a Special Interest Group meeting at the NSA conference in Murfreesboro, and to more fully discuss Chuck's ideas about 3-D photography with interested persons.

Readers are invited to view a YouTube video recently prepared by Chuck's daughter Kimberly and son Kirk, which incorporates a Canadian Broadcast Corporation radio interview of Chuck, and shows off some of his Newfoundland "Before and After" images:

http://youtu.be/6_Nm7pAWG3A.

More information about Chuck's Newfoundland books can be found at <http://www.starosta.com/newfoundland/>. Contact family information on the web page, if you are interested in obtaining a book.

I give thanks to Sam Smith for his help in researching some details about Chuck's 3-D life.

— Boris Starosta 📷📷

NewViews (Continued from page 26)

05/01/15 – *Avengers 2*
 06/05/15 – *Trolls*
 06/12/15 – *Jurassic World*
 06/19/15 – *Inside Out*
 07/10/15 – *MINIONS*
 07/15/15 – *Ant-Man*
 07/24/15 – *Smurfs 3*

11/06/15 – *Peanuts Charlie Brown feature*
 11/06/15 – *B.O.O. Bureau of Otherworldly Operations*
 11/25/15 – *The Good Dinosaur*
 12/18/15 – *Star Wars: Episode VII*
 12/18/15 – *Mumbai Musical*
 2015 – *Pirates Of The Caribbean 5* 📷📷

Retinal Rivalry #4 From Mars?

A mysterious bright spot appeared in images from NASA's Curiosity rover on Mars in early April, causing on-line speculation about the source of what looks like a bright light coming from behind some dunes near the horizon. Whatever it is, stereo photography proves that it's not a constant, stationary light source like some alien porch light or movie premier. The

spot appears in only the right image from the rover's navigation camera, and not in the following sequential left image from the same camera.

While a speeding alien train or

Harley could have moved behind a rock between exposures, a theory from NASA's Jet Propulsion

Lab suggests low angle sunlight glinting off a rock at an angle visible only from the camera's right posi-

tion. In other words, a classic case of Deadly Retinal Rivalry #4, "Anomalous Reflections," as illustrated in Jeff Boller's article "The Seven Deadly Retinal Rivalries" in Vol. 39 No. 4, page 20.

Other NASA theories involve specific angle light leaks (or cosmic rays) hitting the camera's CCD to cause the anomaly. But none are as much fun as imagining joy-riding Martians in a dusty, bouncing vehicle as one screams at the driver, "kill that light, you idiot!"

NewViews

Current Information on Stereo Today

by David Starkman & John Dennis



A sequential pair from the Mars Curiosity rover taken April 3, 2014 (sol 589) shows an unknown spot near the upper left side of only the right image. Cropped from the raw image files at <http://mars.jpl.nasa.gov/msl/multimedia/raw/?s=#/?slide=589>, Navcam: Left B 2014-04-03 10:00:03 UTC and Navcam: Right B 2014-04-03 10:00:03 UTC.

3-D Theater Winners at SD&A 2014

Winners of the Best of Show prizes in the 3-D Theater session at the 2014 Stereoscopic Displays and Applications conference have been announced. The purpose of each year's 3-D Theater session is to showcase the wide range of 3-D content that is being produced and exhibited around the world. This year's show featured a selection of 42 entries from independent artists to major studios, coming from 14 countries.

Best of Show - Live Action category - *Soir de Fête* by David Robert (France). Joachim, 20 or so, a nurse in a psychiatric hospital, is about to leave work to spend New Year's Eve with his family. But his patients,

determined to see in the New Year in style, aren't going to let him leave. Joachim is soon out of his depth as the evening's events become more absurd. But madness is not always where you expect to find it.

Best of Show - Animation / CG category - *Morpheus Trailer* by John Hart (USA). Travels in the fractal dimension; art of Mandelboxes, Menger sponges, hybrids, and fractal flames. (See SW Vol. 36 No. 3, bottom of page 6.)

Around 200 people enjoyed the two hour session held as part of the 25th annual Stereoscopic Displays and Applications conference located in the Hilton San Francisco Union Square Hotel. Judges at this year's SD&A 3-D Theater Session were Lenny Lipton (Leonardo IP), Julien Flack (Dynamic Digital Depth), and Bernard Mendiburu (freelance author and stereoscopic 3-D artist). More about the SD&A conference is available at www.stereoscopic.org.

This column depends on readers for information. (We don't know everything!) Please send information or questions to David Starkman, NewViews Editor, 4049 Coogan Circle, Culver City, CA 90232. Email: reel3d@aol.com.

Upcoming 3-D Movie Releases

05/16/14 - *Godzilla*
 05/23/14 - *X-Men: Days of Future Past*
 05/30/14 - *Maleficent*
 06/15/14 - *Inside Out*
 06/27/14 - *Transformers: Age of Extinction*
 06/20/14 - *How To Train Your Dragon 2*
 07/18/14 - *Dawn of the Planet of the Apes*
 07/18/14 - *Planes: Fire & Rescue*
 07/25/14 - *Jupiter Ascending*
 08/01/14 - *Guardians of the Galaxy*
 08/08/14 - *One-Hundred-Foot Journey*
 09/26/14 - *Popeye*
 10/17/14 - *The Boxtrolls*
 11/07/14 - *Big Hero*
 11/26/14 - *Home*
 12/13/14 - *The Hobbit - Battle of the Five Armies*
 12/15/14 - *Into The Woods*
 12/19/14 - *Tomorrowland*
 2014 - *Girl From Nagasaki*
 2014 - *20,000 Leagues Under the Sea*
 2014 - *Static*
 2014 - *San Andreas*
 03/15/15 - *The Penguins of Madagascar*

(Continued on page 25)

Garret A. Hobart

The President Who Never Was

by Richard C. Ryder

Sometimes it seems the gods of history must have a perverse sense of humor. In the final analysis, the single most important thing that Garret Augustus Hobart, Vice-President of the United States, ever did in his entire life was to die.

Born in the seaside town of Long Branch, NJ, in June of 1844, Garret Hobart came from mixed English, Dutch, and Huguenot stock. Few of his contemporaries could claim a longer American pedigree than Hobart's, one of his ancestors having arrived in Massachusetts a mere dozen years after the *Mayflower*.

A precocious child, Hobart went on to graduate from Rutgers College with honors in 1863 at the age of only nineteen. After a brief stint of teaching school, Garret took up the law in Patterson, working in the law office of Socrates Tuttle, a friend of his father. By 1871, having married Tuttle's daughter, he was a partner in the firm.

He was now active in business and politics as well, being elected to the state Assembly in 1872, and chosen as Speaker two years later. He moved on to the state Senate in 1876, being elected and reelected by sizeable majorities, and served as that body's President in the early 1880s.

Throughout the decade, Hobart headed the Republican state committee and, despite a failed attempt to win election to the United States Senate in 1884 (Senators were still chosen by the state legislatures at the time), he was also a delegate to five Republican national conventions.

In business, Hobart showed the same acumen he did in the law and politics, becoming involved with numerous banks and railroads, and serving on the board of directors of several of the former. He was also President of the Passaic Water Company and, by the early 1890s, had become one of the wealthiest and most influential men in the state.

In 1895, Hobart managed the campaign of John W. Griggs for Governor, restoring the New Jersey executive to Republican control. (Griggs would go on to serve alongside Hobart in the McKinley Administration, as Attorney General.)

The following year, with William McKinley's nomination for the Presidency, Hobart benefited from a "favorite-son" boom to secure the sec-

ond spot on the ticket. In the campaign that followed, the McKinley-Hobart "sound money" team easily beat Democrat-Populist William Jennings Bryan and his inflationary "free silver" agenda, which Hobart characterized as producing a dollar "coined of 53 cents of silver, plus a legislative fiat."

Nevertheless, with the coming of the Spanish-American War, it would be foreign policy and not economic issues that dominated the next few years. Hobart earned high marks in his role as Vice-President, guiding the Senate with a sure hand that was praised by Massachusetts' great Henry Cabot Lodge as having "restored the Vice-Presidency to its proper position."

With debate raging throughout the country over what to do with the former Spanish colonies acquired as a result of the war, Garret Hobart was called upon to exercise a rare Constitutional responsibility, voting to break a tie in the Senate, blocking a bill that would have granted the Philippines immediate independence.

(Continued on page 32)

"Hon. Garrertt [sic] A. Hobart, Vice-President of the United States," stereographed by Underwood & Underwood in 1898 as part of their extensive series of congressional and governmental leaders done in that year. Hobart's death in 1899 opened the door for Theodore Roosevelt's elevation to the Vice-Presidency.



William Culp Darrah (Continued from page 9)

between the Darrahs and Culp's Hill, a prominent location on the Union right and the site of fierce fighting throughout the battle? The hill is located just north of Baltimore Pike and no more than two miles from the Darrah farm.

The Civil War truly was a conflict between friends, a struggle of brother against brother, and sometimes there *were* chance meetings on the battlefield. At Gettysburg, for instance, Gen. Louis "Lo" Armistead, one of Pickett's brigade commanders, and General Winfield S. Hancock, head of the Union II Corps and a close friend from pre-war days, were both wounded, Armistead mortally, within about a hundred yards of each other during Pickett's Charge on the 3rd.

Another, similarly poignant story involves three young people from the town itself. With Gettysburg poised not ten miles from the Mason-Dixon Line, the border with the slave state of Maryland, the conflict sometimes got very personal. On the morning of July 3rd, Jennie Wade was caring for her sister (who had just given birth to a son) in a house on the south end of town when she was struck and killed by a stray bullet that penetrated the kitchen door, thus becoming the battle's only civilian fatality. Before the war Jennie had been friends with two local lads, Jack Skelly and Wesley Culp, eventually opting to marry the former. Then had come 1861 and both young men had gone off to war, while the planned wedding was put on hold.

As Lee began his invasion of the North in June of 1863, Skelly, a member of the 87th Pennsylvania, was wounded and captured by the Confederates in a skirmish near Winchester, Va. Here he was visited by his old friend, Wesley Culp, now a Confederate in the 2nd Virginia. A few years before the war, Culp—along with Skelly's brother—had moved to the Shepherdstown-Martinsburg area, just across the Potomac in Virginia (now West Virginia), and set up as carriage-makers.

On July 3rd, as Jennie lay dead in the home on Baltimore Street, Wesley Culp was killed less than a mile away in fighting at the foot of Culp's

Hill, on property directly adjacent to that *owned* by his uncle—for whom the famous hill was named! Wes Culp had literally come home to die.

After the battle, according to Culp family tradition, Wes's body was recovered and hidden in a root cellar—then quietly buried under an unnamed gravestone in the Culp family plot in Evergreen Cemetery, directly adjacent to what would become the new national soldiers' cemetery. Wes's grave remained identified only by that nameless rock—since the family was strongly pro-Union and Wesley's Southern allegiance was something of an embarrassment to them.

Skelly too would die a week later, without ever learning the fate of his intended. His body too would eventually be returned to Gettysburg. All three friends are today buried within a few hundred feet of each other.

With the repatriation of Southern bodies in the years after the war, Wesley Culp is one of only a few identifiable Confederate soldiers killed at Gettysburg whose remains are still interred there today. He is almost certainly the only such victim actually *from* the town itself.

So was Bill Darrah related to the famous Culps of Culp's Hill? It seems that he was. Culp was Bill's mother's maiden name and, while growing up, he and his brothers had sometimes spent part of the summer in Gettysburg at the Culp home on Middle Street. Bill in fact had been named for Wesley Culp's *brother*, William Culp, a Lieutenant in the *Union* Army—in fact an officer in the very same Co. F, 87th Pennsylvania Infantry in which Jack Skelly had served. Bill Darrah was actually Wesley and William Culp's great-nephew.

The Darrahs' move to Gettysburg became something of an adventure itself. With Gettysburg College's enrollment mushrooming after World War II, thanks largely to the G.I. Bill, there had been insufficient student housing in the immediate postwar years, and the farm's previous owners had converted much of the house into separate apartments for students. There would be much rebuilding to do.

Then too, there would be other problems as well. The Darrahs

arrived in town a day before their furnishings and, while Helen and the girls spent the night at a neighbor's, Bill remained in the new house, working on some initial repairs. Fortunately, he had the family cat for company, for, as soon as he turned off the lights, it became painfully evident that, as with many rural farmhouses at the time, the place supported a large and particularly active population of rats. Bill was kept quite busy dealing with the numerous rodents caught and killed by the cat, who was nearly overwhelmed by the magnitude of the task.

Nevertheless, the Darrahs soon settled into the new home and Bill quickly became involved in community affairs. By 1953, he had been recruited by Gettysburg College, filling in for an ailing faculty member to teach Contemporary Civilization (popularly known as "CC") and Literary Foundations, the mandatory freshman and sophomore courses in the school's general education curriculum. By the following year he was teaching full-time.

Broader responsibilities followed. Ultimately, inevitably, he was co-opted by the Biology Department, teaching both Elementary Biology and more advanced classes in the Embryophytes (ie., the "higher plants," ferns, conifers, flowering plants, and the like), Paleontology, and the Development of the Sciences.

This also allowed him time to pursue his literary and research interests, and Darrah remained at Gettysburg for twenty-one years. Helen was also a professor at the College, teaching Histology and other laboratory sciences. In 1977, three years after his retirement, in recognition of his lifetime of achievements, the College awarded him an honorary doctorate, that formal advance in status he had chosen to forego so many years before.

Darrah's Gettysburg home was not always the most conventional of establishments. At times, the Darrahs would while away an evening with organ music, played by Helen on the instrument they had installed in the parlor. Other evenings would be spent in reading Shakespeare to each other, interspersed with a detailed

.....
 Darrah addresses the
 1983 NSA Convention in
 Washington, D.C.,
 two years after the
 publication of his
 ground-breaking book
 on the history of the
 carte-de-visite completed
 his trilogy of works on
 nineteenth century
 photography.
 (Stereo by John Dennis)



etymological study of the Bard's vocabulary. And, while his health precluded many outdoor activities, he maintained a lively interest in (and involvement with) his girls, although as they entered their teen years, they no doubt had other things on their minds than shooting marbles on the living room rug with Dad, an activity he much enjoyed.

Yet the eye problems lingered on and in 1953 or '54, when a local ophthalmologist applied a cortisone ointment to the eye, the results were counterproductive. Darrah was now completely blind in his left eye.

About ten years after the Darrahs settled in Gettysburg, someone else arrived there. In 1961, upon leaving the Presidency, Dwight Eisenhower and wife Mamie moved to a farm a few miles from the Darrahs, on the southwest of town. Like Bill, Ike soon became deeply involved in College affairs, as a member of the Board of Trustees; he also maintained an office on campus. Darrah and Eisenhower were casual acquaintances through College activities and social functions they both attended. It's a shame they didn't become closer friends because they shared a common interest. Ike was himself an avid stereo-photographer (See SW Vol. 17, No. 1).

During the course of his lifetime, Darrah published some fifteen books and about a hundred professional articles and scientific papers. In addition to that early and troubling *Text-book of Paleobotany* and a shorter, more accessible *Principles of Paleobotany*, books in his chosen field included a text on botany in general and a compendium of Carboniferous floras. Turning to a broader scope, there was of course the Powell biog-

raphy and a history of that long-forgotten boom town, *Pithole: The Vanished City*. And then there were the works on the history of photography.

Darrah first became acquainted with stereographs and their potential use in the documentation of history when he was studying the exploits of John Wesley Powell. "Major" Powell had employed photographers on his various expeditions to document in stereo the geology of the Colorado Plateau and, given the Major's parallel interest in ethnology, the different Indian tribes of the region as well. He then had used the resulting stereographs as part of his campaign to acquire support and financing from Congress and other federal agencies at a time when there were several different government-sponsored Western surveys, often operating at cross purposes and competing for the same backing. It was at the New York Public Library that Darrah first encountered a grouping of the Powell views and recognized their significance.

As was often the case with Darrah, a narrow interest quickly broadened and he was soon collecting not just views published by the Powell survey but stereographs in general, intrigued by their potential in documenting history as well as by their unique but long-neglected role in the technological development of early photography. The Raytheon years had often found Darrah prowling the antique and second-hand book shops of Boston and other New England towns in search of views.

Not always successfully. On one occasion, Darrah encountered a Boston dealer who claimed he had an entire basement full of stereographs. Indeed he did. A large, dis-

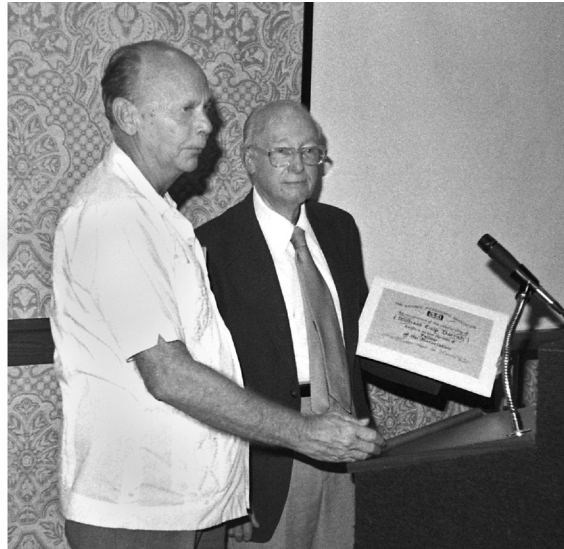
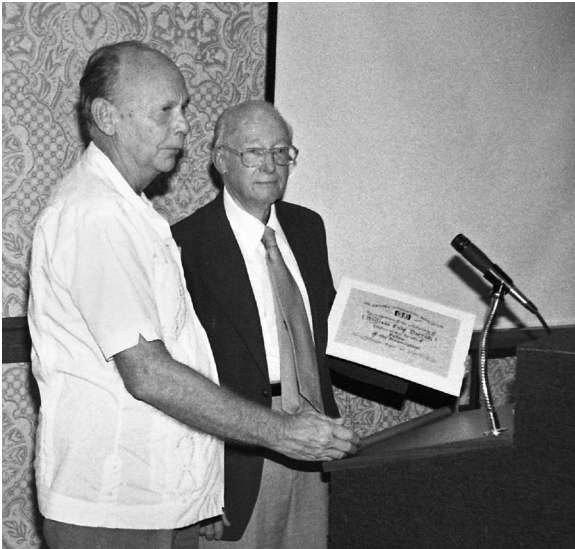
used coal bin, capable of holding perhaps 15-20 tons of the fuel, was literally filled with tens of thousands of cards accumulated over the years. Yet the dealer refused to sell. He had never, it seemed, gotten round to sorting them!

By the end of the Second World War, the Darrah collection was well underway. During these years, Darrah also began to establish a network of contacts with the limited number of serious collectors then in existence, people like Fred Lightfoot, Lorraine Dexter, and Paul Wing. During much of the succeeding 1950s and 1960s, with the aid of a number of suppliers, he was acquiring several thousand views per month, ultimately assembling a superb research collection that numbered well in excess of a hundred thousand views.

It was during these years too that Darrah reconnected with an old friend. One day in the 1950s, he received a phone call from Tex Treadwell, with whom he had not talked since before the war. Curiously, although they had lost contact, they had unknowingly crossed paths during the conflict. As an officer in the U.S. Navy, Tex had been involved with submarine testing of the very radar systems that Darrah was at the time developing for Raytheon.

Tex had encountered Darrah's name from time to time over the years and finally decided to see if it was in fact his old friend. It was. And now it transpired that they shared a new interest as well—stereographs.

When it came to stereo, Darrah's collecting strategy was somewhat unorthodox. He in fact turned over the vast majority of those views he



At the 1983 NSA convention, Darrah's old friend, NSA president Tex Treadwell, presents him with the first annual Fellow of The NSA award, which would be named the Darrah Award in 1995. Tex was instrumental in making possible the 1997 paperback edition of *The World of Stereographs*, and provided a special preface to that reprint.
(Stereo by John Dennis)

so assiduously acquired. In part this was because so many were inevitably duplicates, but only in part. He also did not attempt to assemble examples of *every* view he encountered but was far more interested in *what* a view could tell him—about a particular photographer, genre, or the technological development of the art form. The others he sold off to a considerable and ever-growing group of collectors with whom he corresponded (a list that eventually included myself) who were seeking specific items, photographers, or topics.

(Admittedly, stereographs were still a fairly cheap collectible back then. Darrah introduced *me* to stereo in the late 1960s and I well recall that, at that time, if cards were not exactly a “dime a dozen,” it was still possible to acquire the occasional early Langenheim or even the odd Civil War view at an out-of-the-way antique shop for ten cents!)

And Darrah was studying those views meticulously, as with all his efforts assembling copious and precise notes—on the various photographers, the evolution of card types and photographic techniques, and the emergence of popular genres represented in the images. As with all his research efforts, Darrah was blessed with a “photographic memory” (no pun intended) and exhibited a kind of bulldog tenacity when on the scent.

By now he had acquired a comprehensive and ever-growing knowledge of the history of this unique piece of late-nineteenth and early-twentieth century popular culture. The result was *Stereo Views: A History of Stereo-*

graphs in America and their Collection, privately published in 1964, the first—and long overdue—serious scholarly study of this peculiar cultural phenomenon.

Shortly before his retirement in 1974, Darrah joined Rich Russack, John Waldsmith, Tex Treadwell, and others in forming the new National Stereoscopic Association. Yet surprisingly, given his background, he left running the new organization in the hands of others and only authored a single article in *Stereo World*, on “American Sentimental Stereographs” (1:3), in its inaugural year, together with a brief, untitled “Comment” piece, supplying additional information on Massachusetts stereographer John Heywood (2:2). He did, however, provide *SW* editor John Waldsmith, two years later, with an extended interview, which appeared in serial form throughout several issues of the magazine in 1977-78.

That same year saw the appearance of *The World of Stereographs*, Darrah's second venture into the field and an even more comprehensive, encyclopedic treatment of the topic, dealing with the methodology of the art, individual photographers, and scores of different topics, all within a truly global scope.

Ever broadening his horizons, Darrah soon turned his attention to yet another popular aspect of nineteenth century photography. If stereographs were, far and away, the single most common form of non-portrait photography in the late 1800s, studio portraits themselves were largely the domain of the *carte-de-visite*. These were small card images named for the French calling cards

wealthy socialites customarily left when they visited acquaintances, cards which the small photographs greatly resembled in both size and style. Darrah had begun collecting these as an adjunct to his earlier interest in stereo views, largely because the same photographers generally produced both. Now he was studying them as well.

The result was *Cartes-de-visite in Nineteenth Century Photography*, published in 1981, yet another seminal study of a much neglected art form. Both *World of Stereographs* and *Cartes-de-visite* were recognized by the Association of American Publishers with their prestigious Benjamin Award, a rather unique honor given that both volumes were self-published. Then too, when the NSA established its annual awards program in 1983, Darrah became the first to receive its highest distinction, being named that year's Fellow of the National Stereoscopic Association for, as the award specified, “distinguished scholarship in and extraordinary knowledge of stereoscopy.”

Even in retirement, Darrah's active mind continued to probe new subjects, ranging from the history of engineering at Gettysburg College to the ecology of the Gettysburg Battlefield's Round Tops. His paleobotanical activities included collaborating with noted paleontologist Horace Richards on a revised catalogue of the fossil plant collections at Philadelphia's venerable Academy of Natural Sciences. Although no longer able to do much active field collecting after the mid-1970s, he nonetheless co-authored half a dozen additional paleobotanical articles with

Paul C. Lyons and continued to participate in professional conferences on the subject; he was in fact planning to attend just such an International Geological Conference in Washington, D.C., at the time of his death.

Perhaps his most notable contribution in the field in these latter years, certainly the one with the most immediate impact on the general public, was his role as primary technical consultant on a project for the Richard Rush Studios, a life-sized walk-in reconstruction of a Carboniferous "coal swamp" for what is now the Pennsylvania State Museum in Harrisburg. Here the visitor would be transported back in time to an age when giant *Meganeura* dragonflies droned above clumps of *Calamites* and horsetail rushes, while huge labyrinthodont amphibians lurked beneath towering tree ferns and "scale trees" like *Lepidodendron* and *Sigillaria*, at the very time when Pennsylvania's great coal deposits were being formed.

Gen. Douglas MacArthur famously said of old soldiers that they never die but simply fade away. Although Darrah was no soldier, he certainly confounded the famous aphorism; even in death he refused to fade away. At the time of his passing, in May of 1989, he was hard at work on a study of the role of women photographers in the nineteenth century and had been scheduled to deliver the keynote address at a conference on the subject at Bryn Mawr College in June. The paper was ultimately published posthumously.

Yet even that did not represent the final tally of his work. A massive 2-volume compendium, more than 800 pages in length, cataloguing the work of more than 13,000 stereographers, was compiled from Darrah's notes by the NSA's Tex Treadwell (Bill's old friend) and published in 1994.

Then too, there was his lingering influence on so many others, both in the paleontological community and elsewhere. One such was William Frassanito, who, like me, was a student at Gettysburg College when he was encouraged by Darrah to pursue his interest in early photography. Bill went on to a prestigious career as an eminent historian and author of numerous works on Civil War photography, works like *Gettysburg: A*

Journey in Time, *Antietam: The Photographic Legacy of America's Bloodiest Day*, *Grant and Lee: The Virginia Campaigns*, and the truly magisterial *Early Photography at Gettysburg*. Bill so appreciated Darrah's influence that he dedicated *Antietam* to him.

I too have written for publication, nearly ninety articles now, primarily for *Stereo World*, but for *American History Illustrated* and other publications as well. All of those articles either related to or to an extent relied on some aspect of stereographic history. None of that would have been possible without the influence of that former biology professor at Gettysburg College who first introduced me to collecting stereographs and then encouraged me to write about them. We kept in touch over the years, sometimes supplying each other with information for projects we were working on; at times he even proofread articles I had pending.

There were several reasons for Darrah's impact on those around him: his warm, engaging personality, the fact that he always seemed to have time for his students, even his occasional foibles. He was, for example, an extremely picky eater (something else I can readily identify with), with strong likes and dislikes, an eccentricity that stemmed in part from an allergy to butter and had gotten him in trouble as a youngster on more than one occasion.

Back in the summer of 1981, when the NSA was still holding its annual Convention in Canton, Ohio, Darrah wrote to me saying that he was going to attend, was even to participate in one of the symposia, but had no easy means to get there. If I was planning to attend, would I mind swinging by Gettysburg and taking him out with me? I, of course, would have been delighted. Alas, the dates of the Convention were changed and Darrah, due to another commitment, was unable to go.

Pity. It would have been a truly wonderful trip. Yet, after all these years, William C. Darrah, my old biology professor, remains the single most amazing individual I have ever encountered and the paramount influence on both my collection and study of stereographs. His legacy lives on in all of us who knew him.

Thanks are due to Elsie Darrah Morey, Bill's daughter, without whose kind assistance and shared personal recollections this article would have been impossible.

Notes

1. The Carboniferous Period was the next to last subdivision of the Paleozoic Era, which is itself the first of the three great segments of life on earth since the "explosion" of hard-bodied, multicellular life forms in the oceans of the Cambrian Period some 550 million years ago. Unlike their European colleagues, American paleontologists usually refer to the early and late Carboniferous as the "Mississippian" and "Pennsylvanian" Periods respectively, geographical distinctions which make little sense as rocks and fossils of both ages are distributed widely throughout both Europe and America. This was the world Darrah was trying to unravel.
2. Built in Belfast by Harland & Wolff, the same shipyard that had built *Titanic*, the 16,000 ton, 600-foot *Westenland* had been completed as *Regina* for the Liverpool-based Dominion Line and entered service in 1922. By the mid-1930s, the liner had been bought by the German-based Red Star Line, renamed *Westenland*, and was employed on the Antwerp-New York route. After the fall of the Netherlands in May of 1940, she served briefly as the seat of the Dutch government-in-exile before being converted for use as a troop transport during the war, finally being broken up in 1947.
3. Foremost among these was French paleobotanist Paul Bertrand of the University of Lille, who had usually supported Darrah's positions at the 1935 conferences. He died in Paris in 1944, just six months before the Liberation, not because he was singled out for mistreatment but due to the general lack of food and medical care in the capital under the German occupation. Others had collections and research seized by the Germans, while W. Jongmans, Darrah's more confrontational Dutch host, had to hide his son (and several other young geologists), to prevent their being seized by the Nazis for use as forced labor.
4. Another product of Harland & Wolff, the 29,000 ton, 700-foot *Statendam* was launched in 1924 and completed in 1929, making her maiden voyage from Rotterdam to New York in April of that year. The ship had a relatively short career, being laid up at Rotterdam in late 1939, shortly after the outbreak of World War II, subsequently being destroyed by bombs during the German invasion of the Low Countries in May of 1940. 🏴‍☠️

The Society and Beyond (Continued from page 21)

the page a bit to find the link, labelled "Stereoscopic Society of American Exhibition Entry Form 2014.")

Report on the Anaglyph Folio

by Betty Drinkut, Circuit Secretary,
bettysued5@gmail.com

Anaglyphs are those funny looking red/blue (or red/green) pictures that miraculously become three dimensional when you wear those corresponding colored glasses. They were first developed by Wilhelm Rollmann, Leipzig, Germany, in 1842. He was writing a geometry book so that mathematicians could visualize their work.

As typical, Rollmann used Greek to name this kind of drawing—"ana" and "gluphein," which means to carve or sculpt. Some people believe that anaglyphs are easier to view than side-by-side or cross-eyed views, but others do not like the fact that the colors are not true.

As a kid, my first memory of anaglyphs was the cards that came in Nabisco Shredded Wheat with stories of the Lone Ranger. Many Saturday mornings were spent at my grandparents' kitchen table reading card to card, following the adventures of the Lone Ranger and Tonto.

Fast forward to the twenty-first century; digital cameras, StereoPhoto Maker, color printers, etc. enable you to create your own funny looking pictures that miraculously become three dimensional when you wear those corresponding colored glasses.

The Stereoscopic Society of America is a group of currently active stereo photographers who circulate their work by means of postal folios. Both print and transparency formats are used, and several groups are operating folio circuits to meet the needs in each format. When a folio arrives, a member views and makes comments on each of the entries of the other participants. His or her own view, which has traveled the circuit and has been examined and commented upon by the other members, is removed and replaced with a new entry. The folio then continues its endless travels around the circuit. Many long distance friendships have formed among the participants in this manner over the years.

Stereo photographers who may be interested in Society membership should contact the Membership Secretary, Dan Shelley, 4366 Morning Glory Rd., Colorado Springs, CO 80920, (719) 209-2799, dshelley@dddsgn.com

When you do create an anaglyph, you should consider joining the SSA anaglyph folio to share it with others.

The members of the Anaglyph folio usually see the folio two or three times a year. The views by David Goings, Wolfgang Sell, Les Gehman and others are included for viewing, commenting and stealing ideas; I mean, inspiring. With each view, members share not only the view but also pertinent information on camera, lens, tripod, slide bar, lens separation, film, paper, lighting and/or any other additional information they think viewers might like to know.

Report on the Omega Folio

by Dr. Peter H. Jacobsohn, Circuit Secretary,
peterandjean@sbcglobal.net

In October, 2001, Shab Levy, one of our most respected innovators, launched the Omega transparency folio for Realist format stereo slides.

The folio started with one box and 14 contributors. In early 2002, I was privileged to be asked to become the secretary of the Omega folio. Shortly thereafter, with the approval of the folio membership a second box was introduced. Unfortunately, the original box was lost in 2003. All attempts to trace and recover it were without success. A replacement was initiated in 2004. The folio boxes that were begun in 2002 and 2004 are still in circulation today. The Omega folio is now 13 years old. Remarkably, many of the original members are still contributing today. They are all first-rate stereo photographers with a wide variety of photographic interests. In this day, when the focus has largely turned to digital, it is encouraging to see that there are still a number of us that embrace the transparency media. I encourage you to join us. ☺☺

Personalities (Continued from page 27)

The archipelago would remain in American hands, for good or ill, with profound implications for the future. More than anything else, it would be the continued American ownership of (and military bases in) the Philippines that would convince the Japanese in 1941 of the need to eliminate the American fleet at Pearl Harbor.

All of that was future history, however. For now the Vice-President enjoyed easy access to McKinley, who consulted him on a regular basis. Hobart was not a great speaker, but his warm and genial nature won him many friends and his home in the nation's capital quickly became a center of the Washington social scene.

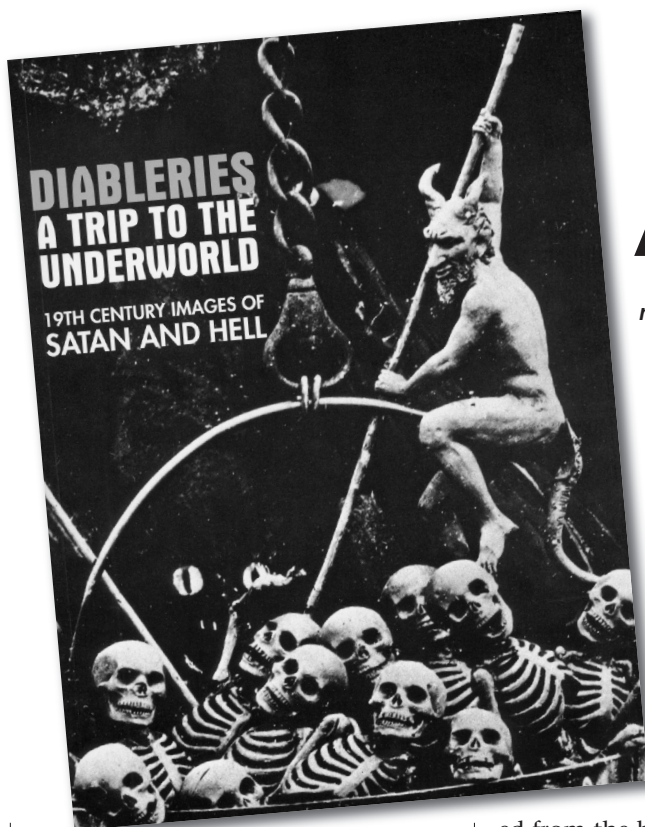
Yet by early 1899, Vice-President Hobart was seriously unwell. He soon abandoned the uncertain climate of the capital for the more salubrious seaside air of Long Branch in an effort to regain his health. But such was not to be. The Vice-President finally returned home to Patterson where he died in late November.

In death, Garret Hobart's impact on history actually grew. Had it not been for his untimely illness and death, the well-liked and capable Vice-President might well have

remained on the ticket with McKinley in 1900, and, presuming McKinley's assassination at the Pan-American Exposition late in 1901 still occurred, he would thus have risen to become President of the United States. But fate, ever the unkind arbiter of history, had removed that potential scenario and opened up the 2nd slot on the Republican ticket in 1900.

That was just what Boss Thomas Platt of New York needed to hear. He had been looking for a way to nudge his headstrong party colleague out of the Governor's Mansion in Albany. Now if only the man could be persuaded to take the Vice-Presidential nomination that should have been Hobart's. It would be good for the party, of course, war hero on the ticket and all that. Dickey though. The man wasn't stupid. It would take some careful manipulation to pull it off. The Vice-Presidency had been the graveyard of far too many political careers over the years.

Yet Platt was confident. He would appeal to the Governor's sense of duty and, if that didn't work, to his tremendous ego. With luck, he would never have to hear the name of Theodore Roosevelt again. ☺☺



A Flat, Gray Hell

review by John Dennis

Many writers have bemoaned the use of half-stereos in otherwise well researched and informative books dealing in some way with the history of photography or the photography of history. (As does Lawrence Jones, quoted in our review of his just published *Lens on the Texas Frontier* in this issue.) But in late 2013, a book appeared which inspired not just disappointment but actual outrage at its treatment of stereoviews, since a classic series of stereos was the book's sole subject.

Diableries: A Trip to the Underworld: 19th Century Images of Satan and Hell, edited by Candice Black (Sun Vision Press, 2013), enticingly refers to stereoscopic photography in the first sentence of its back cover blurb and Amazon promotional description, and concludes by claiming that "The 72 images are first shown in their entirety..." In fact, only half-stereo thumbnails are reproduced in black

and white, followed by page after page of flat, black and white enlargements from the 1868 Adolph Block series. Not one full stereo pair or card is shown, and not one of the half-stereos is illuminat-

ed from the back to at least reveal the piercing of eyes and other highlights in black and white.

The book's solitary page of text appears in the form of a brief foreword whose very first two sentences contain glaring errors—one claiming that Sir Charles Wheatstone developed stereoscopic photography in 1838 (he invented the stereoscope for 3-D drawings prior to the introduction of photography), and the other claiming that his stereoscope used prisms when it actually used mirrors. But the real howler is the fourth sentence, discussing the popularity of stereoviews following the 1850s: "These cards consisted of the same image presented twice, side by side, which when viewed through a

stereoscope gave the illusion of 3-D." (The foreword is unsigned, but perhaps whoever wrote it assumed special glasses would be provided with the book to give the illusion of actual research!)

The hand coloring of the tissues for backlit viewing is mentioned, but not the piercing of the photos for glowing eyes or light sources when backlit—an omission perhaps serving to keep purchasers of the book from realizing what they are missing in addition to color, not to mention an entire dimension.

The clear impression is of something thrown together quickly to get a book on the market just ahead of *Diableries: Stereoscopic Adventures in Hell* by Brian May, Denis Pellerin and Paula Fleming. (SW Vol. 39 No. 2, page 30.) It's depressing to think anyone would rush an inferior work to print to take advantage of the anticipation surrounding a then upcoming publication by three of the most knowledgeable researchers and writers in the entire field of stereoscopic history. 📷

Diableries: A Trip to the Underworld: 19th Century Images of Satan and Hell

edited by Candice Black,
Sun Vision Press, 2013, softbound
8.5 x 11 inches, 120 pages.
ISBN: 978-0985762544. One page of
text followed by 2-D black and white
thumbnails and enlargements of 72
half-stereos from the 1868 Adolph
Block series of tissue views.

2014 Image of War Seminar in Fredericksburg



Registration is open for the 14th Annual *Image of War* Seminar sponsored by the Center for Civil War Photography. This year's seminar will be in Fredericksburg, VA Oct. 10-12, 2014. Highlights include: A special 4-D and wet plate experience on the actual Brompton grounds at Marye's Heights, photo-based battlefield experiences at Fredericksburg, Chancellorsville, Wilderness, Spotsylvania and North Anna, 3-D presentations, indoor and on-the-field, banquet and the CCWP raffle/auction, Walking tours of the Sunken Road, downtown Fredericksburg, Jackson's wounding, Saunder's field and more. For details, see www.civilwarphotography.org.

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CENTRAL PACIFIC RAILROAD Photographic History Museum. Stereographs of the first transcontinental railroad are now on display at: <http://CPRR.org>.

GOING OUT OF BUSINESS - Glamour to X-Rated 3D Realist slides and equipment for sale. We were the largest producer of this material since Ron Raffaelli. Over 100 models photographed by centerfold photographers from 1980's-2000. New site risquephotos.net now up to 70% off. Inventory includes: 3D and 35mm slides, uncut rolls, mounts, vintage B&W and current photos, so much more. Dealers Welcome sales@risquephotos.net.

JOIN THE INTERNET'S fastest growing, most active and progressive 3D forum, at www.3dphoto.net/forum. Learn, share and expand your 3D knowledge, keep abreast of new developments and join talented enthusiasts from around the world.

STEREOVIEW AUCTION PRICES. Only \$10.00 in CD format!! Great for people buying from auctions and for collectors who want to know the latest realized auction values. Only numbered views over \$50 are listed. Doc Boehme, PO Box 326, Osakis, MN 56360.

SWEETHEART VIEWER, Original mint condition, Alex Becker, First USA Patent #16962, April 7, 1857. Should be in a museum or in an avid collector's collection. See on pages 61 and 62 in "Stereoscopes the First One Hundred Years." Selling my collection. Will send photos if interested. Jeves29@bex.net.

THE DETROIT Stereographic Society invites you to attend our monthly meetings at the Livonia Senior Center, on the second Wednesdays, September through June. Visit our website www.Detroit3D.org or call Dennis Green at (248) 398-3591.

As one of the benefits of membership, ANSA members are offered free use of classified advertising. Members may use 100 words per year, divided into three ads with a maximum of 35 words per ad. Additional words or additional ads may be inserted at the rate of 20¢ per word. Please include payments with ads. We cannot provide billings. Ads will be placed in the issue being assembled at the time of their arrival unless a specific later issue is requested.

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5610 SE 71st, Portland, OR 97206.
(A rate sheet for display ads is available from the same address. Please send SASE.)

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VISIT www.stereoscopy.com/3d-books and have a look into the three View-Master Collector's Guides: a total of 1,616 pages of View-Master information, including 96 color pages showing old V-M ads and 1,250 V-M packet covers.

Wanted

1905 LEWIS & CLARK Centennial Exposition Stereoviews. Email Ed Rosney at edrosney@earthlink.net or call (503) 239-9890.

ALABAMA STEREOVIEWS. Michael McEachern, 711 South 3rd St., Hamilton, MT 59840. (406) 363-7507, cave3D@msn.com.

ALASKA & KLONDIKE stereos needed, especially Muybridge; Maynard; Brodeck; Hunt; Winter & Brown; Continent Stereoscopic. Also buying old Alaska photographs, books, postcards, ephemera, etc. Wood, PO Box 22165, Juneau, AK 99802, (907) 789-8450, dick@AlaskaWanted.com.

ANY IMAGES of Nevada City or Grass Valley, California. Mautz, 329 Bridge Way, Nevada City, CA 95959, cmautz@nccn.net.

Wanted

BLACK HILLS DAKOTA. Want views to illustrate book on early days by photographers such as D.S. Mitchell, C.W. Stiff, Coules and McBride, Clark Angell, Pollock and Boyden, Justus Fey, F.J. Haynes, C.B. Manville, Ben Oppenheimer, C. Hamilton, C. Howard and others. Will "rent" or buy. Robert Kolbe, 1301 S Duluth Ave., Sioux Falls, SD 57105, (605) 360-0031.

CANADIAN VIEWS: Montreal and Quebec City stereos, larger formats and photo albums wanted! Taken before 1910. Especially Vallee, Ellisson, Notman, Parks, or other fine photographers. Email Pierre Lavoie at papiolavoie@hotmail.com or call (418)440-7698.

COLLECT, TRADE, BUY & SELL: 19th Century images (cased, stereo, Cdv, cabinet & large paper) Bill Lee, 8658 Galdiator Way, Sandy, UT 84094.

billleette@juno.com
Specialties: Western, Locomotives, Photographers, Indians, Mining, J. Carbutt, Expeditions, Ships, Utah and occupational.

COMIC VIEWS with character "Si Slocum." Send email with description (or a low res scan) to 3dchlaw@comcast.net or by mail to Dwight Harvey, 323 S. Second St., McConnellsburg, PA 17233.

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4 x 5	100 for \$10	1000 for \$ 90
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Large Cabinet (4-1/2 x 7)*	100 for \$12	1000 for \$110
5 x 7	50 for \$10	200 for \$ 35
#10 Cover (4-38 x 9-5/8)	50 for \$11	200 for \$ 35
Boudoir (5-1/2 x 8-1/2)	25 for \$ 9	200 for \$ 60
8 x 10	25 for \$10	200 for \$ 70
8-1/2 x 11	20 for \$10	200 for \$ 85
11 x 14	10 for \$10	100 for \$ 75
16 x 20	10 for \$25	100 for \$200
Total		

U.S. Shipping—\$4.00 per order, non-U.S. please email
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*Large cabinet sleeve is seamless but .5 mil lighter

Carl Mautz

530-478-1610 cmautz@nccn.net

• Order Sleeves or Books online at www.carlmautz.com

Wanted

CORTE-SCOPE VIEWS or sets, any subject or condition. No viewers unless with views.
John Waldsmith, 302 Granger Rd., Medina, OH 44256.

F40 VERASCOPE for collection. Also need Iloca Rapid with 2.8 lenses. G. Van Horn, PO Box 207, Llano, CA 93544, (661) 261-9207.

FLORIDA, Anthony, Wood&Bickel, Field, small Florida towns. High prices paid or trade for rare stereoviews I have of other states. Hendriksen, 1590 South Tropical Trail, Merritt Island, FL 32952-5135 or flacollector@bellsouth.net.

HECKLE & JECKLE 3-D comics, Foreign language 3-D comics, rare 3-D comics and original 3-D comic artwork. Email Lawrence Kaufman - kaufman3d@earthlink.net or call 951-642-0691.

HENSEL VIEWS wanted. He worked in Port Jervis NY and Hawley PA. Send details to D. Wood, PO Box 838, Milford PA 18337, cdwood@ptd.net.

I BUY ARIZONA PHOTOGRAPHS! Stereoviews, cabinet cards, mounted photographs, RP post cards, albums and photographs taken before 1920. Also interested in Xeroxes of Arizona stereographs and photos for research. Will pay postage and copy costs. Jeremy Rowe, 2120 S. Las Palmas Cir., Mesa, AZ 85202.

JOHN P. SOULE California views. Please visit my website: www.roberts3d.com.

MUYBRIDGE VIEWS - Top prices paid. Also Michigan and Mining - the 3Ms. Many views available for trade. Leonard Walle, 47530 Edinborough Lane, Novi, MI 48374.

NEUSCHWANSTEIN View-Master reel (1509 D) in excellent to new condition.
hornsth@frontier.com State price and condition.

O.S. LEELAND. Writer seeks images and information on South Dakota photographer O.S. Leeland. He produced stereos mainly in 1904. The mounts read "Leeland Art & Mfg. Co, Publishers, Mitchell, South Dakota." Cynthia Elyce Rubin, 8507 Giovana Court, Orlando, FL 32836, cynthiaelyce@earthlink.net.

SEEKING ANY TYPE IMAGES by Joseph Weekes/Weeks of NYC, Albany NY, Norwich CT, possibly Illinois or Kansas, 1850-1875. Stereoviews, CDVs, daguerreotypes, etc. Rocketito, PO Box 5540, Victoria TX 77903. Rocketito@sudden-link.net.

SINGLE VIEWS, or complete sets of "Longfellow's Wayside Inn" done by D. C. Osborn, Artist, Assabet, Mass., Lawrence M. Rochette, 169 Woodland Drive, Marlborough, MA 01752.

STEREOVIEWS OF THE DANISH West Indies (DWI) of Virgin Islands (St. Thomas, St. Croix or St. John/JAN). Also views by "Holt & Gray." Contact: Michael Sheen, 6249 Frydenaoj - 49, St Thomas, U.S.V.I. 00802-1403, (340) 714-1884 or mosheen@islands.vi.

THE DETROIT Stereographic Society invites you to attend our monthly meetings at the Livonia Senior Center, on the second Wednesdays, September through June. Visit our website www.Detroit3D.org or call Dennis Green at (248) 398-3591.

Wanted

WHITE MOUNTAINS: Early photographic views and stereoviews of new Hampshire White Mountain and northern NH regions, 1850s-1890s wanted for my collection. Town views, main streets, bridges, homes, occupational, coaches, railroads, etc. E-mail images to dsundman@LittletonCoin.com, or send photocopies to David Sundman, President, Littleton Coin Company, 1309 Mt. Eustis Rd., Littleton, NH 03561-3735.

WHITE-ON-BLACK lithographic paper views of geometric shapes, objects, sculpture, etc., especially those with blue backs #1-20 for purchase or publication. Email jpegs to Jan Schimmelman, schmmel@oakland.edu.

Wanted

WILL PAY FOR LENTICULARS of any type. If you have 3D pictures of any type I will pay cash for them. William Boldyreff, 6677 E Bogardus St, Pellston, MI 49769, (231) 539-3038, email wmbold@yahoo.com.

WILLIAM ENGLAND/LSC: American views. Need scans of: Indian women at bead-work; A way-side scene/organ-grinders; The flume, White Mountains (with WE blindstamp). Information on boxed set of this series? Please contact Gerlind Lorch at william.english@web.de.

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POSTCARD (3 3/4" X 5 3/4")	per 100:	\$10	case of 1000:	\$90
4" x 5"	per 100:	\$11	case of 1000:	\$90
STEREO / #6 3/4 COVER (3 3/4" x 7")	per 100:	\$11	case of 1000:	\$100
STEREO SUPER POLYESTER 3 mil	per 100:	\$24	case of 1000:	\$230
4" X 6"	per 50:	\$6	case of 1000:	\$100
CABINET / CONTINENTAL (4 3/8" X 7")	per 100:	\$12	case of 1000:	\$110
#10 COVER / BROCHURE (4 3/8" x 9 5/8")	per 50:	\$12	case of 500:	\$110
5" x 7"	per 50:	\$10	case of 200:	\$35
BOUDOIR (5 1/2" X 8 1/2")	per 25:	\$9	case of 500:	\$110
8" x 10"	per 25:	\$10	case of 200:	\$65
8 1/2" X 11"	per 25:	\$11	case of 200:	\$80
10" x 14" MUSEUM BOX SIZE	per 10:	\$11	case of 100:	\$85
11" x 14"	per 10:	\$10	case of 100:	\$70
16" x 20"	per 10:	\$24	case of 100:	\$160

Russell Norton, PO Bx 1070, New Haven, CT 06504-1070 / (203) 281-0066 / stereoview.com

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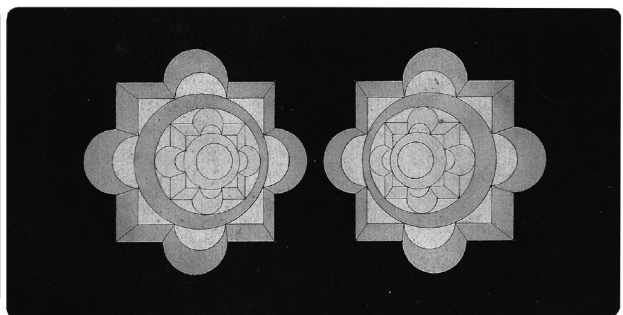
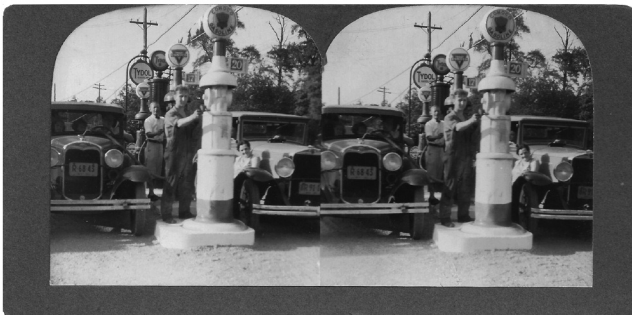
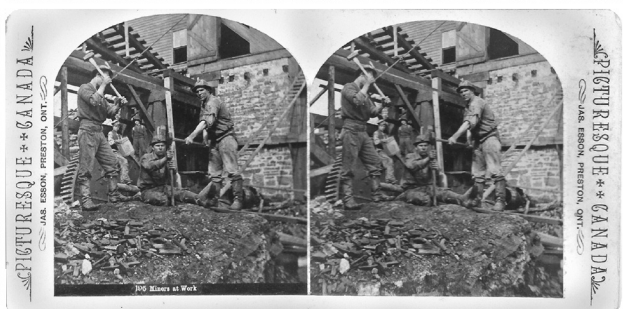
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